

**Professional roles and the commercialization of hospital
services:
A case study of medical laboratory scientists**

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1. ABSTRACT

In the last twenty years, the NHS has been undergoing great changes. There have been moves towards what may be termed, the commercialization of the service, originating from the general management movement of the Griffith's Report (1983), privatisation moves and the more recent 'internal market' reforms of the NHS and Community Care Act (1990). The implementation of these changes has pervaded all parts of the NHS, challenging the work of professional groups, as they work within a constantly changing environment.

This case study focuses on one such group, medical laboratory scientific officers (MLSO's, now known as biomedical scientists) who work in pathology laboratories, within this constantly changing NHS environment. The study initially reviews the political debate surrounding the 'commercialization' of the NHS under the Conservative government of the 1980 - 90's. The history and development of MLSO's within the NHS at this time has been examined, embracing their relationship with the medical pathologists, and this has been drawn into the study.

The case study centres on a group of MLSO's in a typical pathology laboratory in the north of England, and by utilising both participant-observation and key-informant evidence, has increased the understanding of how the moves to 'commercialize' the NHS have affected the employment and professional issues faced by these MLSO's. In order to assess the extent of this 'commercialization', the study has also considered the similarities and differences between these NHS MLSO's, and those employed in a comparable private sector pathology laboratory.

Although the background to the NHS changes is complex and provides a constantly changing environment, it has been possible to show how the MLSO's in the study have been affected, and that this may be further extended to MLSO's in general. The main impact seen has been through the introduction of general managers into the NHS, who have brought about changes to the terms and conditions of MLSO's, particularly with regard to the introduction of altered working patterns (such as shiftwork), and also other wider aspects of MLSO work such as the increased use of both laboratory automation and the cheaper, less qualified staff grades (medical laboratory assistants). The study has also found that although differences exist between MLSO's in the NHS and private sector, these are becoming less obvious, with an apparent convergence of the two types.

Other issues have emerged from the study, including the impact of the extended role of other health professionals (particularly nurses) and the continuing advances in science and technology, particularly robotics, which will play a major part in shaping the future role of MLSO's.

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4. ABBREVIATIONS

ASTMS	Association of Scientific Managerial and Technical Staffs
BMA	British Medical Association
BMS	Biomedical Scientist
CIP	Cost Improvement Programme
CME	Continual Professional Education
CPA	Clinical Laboratory Accreditation
CPD	Continual Professional Development
CPP	Continual Pathology Processing
CPSM	Council for Professions Supplementary to Medicine
CRES	Cash Releasing Efficiency Scheme
DGM	District General Manager
DGH	District General Hospital
DHA	District Health Authority
DHSS	Department of Health and Social Services
DOE	Department of Education
DOH	Department of Health
GP	General (Medical) Practitioner
HC	Health Circular
HMO	Health Maintenance Organizations
IBMS	Institute of Biomedical Science
IMLS	Institute of Medical Laboratory Science
IMLT	Institute of Medical Laboratory Technology
MLSO	Medical Laboratory Scientific Officer
MLT	Medical Laboratory Technician
MSF	Manufacturing, Scientific and Finance (Union)
NALGO	National Association of Local Government Officers
OPCS	Office of Population Censuses and Surveys
PBLAA	Pathological and Bacteriological Laboratory Assistants Association
PHLS	Public Health Laboratory Service
PFI	Private Finance Initiative
RCPATH	Royal College of Pathologists
RM	Resource Management
TQM	Total Quality Management

5. INTRODUCTION AND AIMS OF THE STUDY

Over the last twenty years there have been significant changes within the NHS, the impetus for which has come from both internal and external sources. There has been a growing dissatisfaction from occupational groups within the service because of increasing restrictions and constraints placed upon them (Allsop, 1984). Externally, more emphasis had been placed upon securing 'value for money' within private and public services. This had evolved from the 'free market' and 'managerialism' models advocated by the ideology of the New Right, which had been adopted by the long standing Conservative government of the 1980-90's under economic and commercial pressures to increase efficiency and effectiveness without any major increases in public funding.

This research focuses on the impact of these moves to 'commercialize' the NHS, through the introduction of 'managerialism' and the 'internal market' reforms, on a group of Medical Laboratory Scientific Officers (or MLSO's, note - from 1995 referred to as Biomedical Scientists, however for clarity the term 'MLSO' has been used throughout this study) within the NHS. The initial interest and impetus for the research was drawn from the researcher's participant observations as a member of the occupation under study, whilst working within this mutable healthcare environment. This led to a fascination with the ideology and practicalities of the NHS reforms and how these might affect the work and role of Medical Laboratory Scientific Officer's (MLSO's). Whilst there have been a number of external changes occurring which have affected the work of MLSO's (the most notable being the advances in medical technology leading to the increased use of automation within pathology laboratories) which have occurred independently of the NHS reforms, the initial interest was in the affect that the reforms

were having on MLSO's. However, due to the complexity of the research subject and the fluctuating NHS environment, difficulties in the demonstration of causal links were anticipated.

This study involves three main areas; the first, is the political and economic situation of the NHS in the 1980-90's, particularly relating to 'managerialism' (Griffith's Report DHSS 1983a, Gabe, Calnan and Bury, 1991, Cousins, 1987), the introduction of market forces as a means of allocating healthcare (Enthoven 1985a, the NHS and Community Care Act 1990, Lawton and Rose 1991, Ham 1990 & 1994), and the influence of the 'New Right' (Forsyth 1982, Gamble 1983 & 1988, Levitas 1986).

The second area is concerned with the nature and development of professions, and how they function within large organisations (in this case, the NHS). Much of the early work in this area was concerned with defining the term of 'profession', and concentrated on determining the required characteristics of such. This has been summarised by Dawson (1992). Others have looked at the term as a process and were interested in the way in which occupations developed ('professionalization') towards the end-point of 'professionalism' (Wilensky 1964). More recent work in this area has looked at the development of inter-professional competition (Armstrong 1984, 1987). The concept of professionals working within large organisations has been previously considered (Kornhauser 1962, Harries-Jenkins 1970). Harrison and Pollitt (1994) argued that three strategies have influenced the challenge to NHS professionals from the recent reforms: general management, improved information systems, and the weakening of trade unions and professional bodies. These are important factors in considering the development of MLSO's in the NHS.

The third area involves the examination of the activities of an occupational group (MLSO's); based on the analysis of 'role'. There are a number of approaches to role analysis, involving behaviours, activities, meanings and action analysis, each having its own definitive view. A general definition, echoed by a number of writers in the organisational field, and one adopted for this study, is that a role is consistent with the 'pattern of behaviour expected by others from a person occupying a certain position within an organisational structure' (Huczynski and Buchanan 1991, Mullins 1993). In the context of this study, the more general prescriptive/descriptive approach has been utilised. This essentially means that a persons occupational 'role' may be analysed by studying the activities and duties that they should perform against those which they actually do perform.

This study is therefore concerned with various levels of analysis. On the one hand is the macro level analysis of the political-social environment which underpins the NHS, and in which medical laboratory scientists have to perform their occupational duties, and on the other, the micro-level at which individuals work within an organisational structure, in this case, NHS hospital trusts. In addition to this, the themes of 'professions and organisations' and 'role', have been drawn into the analysis.

In order to show that the NHS changes have affected MLSO's it has been useful to adopt the work of Leavitt (1965). He argued that organisations consist of four interacting variables: structure (patterns of authority, responsibility, communications and workflow), people (all the employees of the organisation), task (the organisation's purpose) and technology (the tools and techniques required to carry out the purpose).

He proposed that change can affect or be directed at any of these variables. As these variables are interdependent, a change introduced at one will influence the others, and the deliberate change of one variable may produce either; desired (anticipated) change or undesired (unanticipated) change, in another organisational variable. From this it follows that if a structural change occurs, then this should induce a change in one or more of the other variables (people, task and technology). This study has used the structural changes introduced by and following on from the Griffith's report (those of managerialism, increased private sector involvement, and the internal market), which provided the initial interest, and examines how MLSO's have been affected, both as employees and as a 'professional' group. However, the situation within the NHS has been, and remains complex, in that there are a number of other changes affecting the work of MLSO's which have occurred independently of the NHS, the most prominent being that of advances in medical technology leading to an increased use of automation in pathology laboratories. This simultaneous effect on other organizational variables (see Leavitt's framework) adds to the complexity of the research situation. The study uses the researcher's initial participant observations as a framework, and builds upon this by utilising interview data from 'key informants' and documentary information. Also, because MLSO's have counterparts working within private sector commercial laboratories, it was felt appropriate that a comparative view of their work and role should be included in the study. This would be used to assess how far the commercialization of the NHS had developed.

This case study was carried out in the period from October 1992 to October 1996, at a 750 bedded district general hospital in the north west of England, which throughout is referred to as Hospital X. Hospital X together with another local 150 bedded hospital

forms an NHS Trust (referred to as Trust Y), serving a combined population of just under a million people. Trust Y provides all general hospital services (medical, surgical, paediatric, geriatric, orthopaedic, obstetrics and gynaecology, neonatal special care), accident and trauma, facial-maxillary surgery and the regional specialities of burns and plastics, neurosurgery/neurology, renal medicine, and a sub-regional cancer unit (a recent addition, opened in February 1997 providing radiotherapy and chemotherapy) under contract to two main health authorities and six fund-holding GP practices in the surrounding area. These clinical departments are backed up by the clinical support services of; pathology, radiology, physiotherapy, occupational therapy, dietetics, and physiological measurement.

In order to provide these services, the trust employs a total of over 1200 staff (including 810 nurses and 215 doctors - 1996 figures). In the pathology laboratory are 63 MLSO's, 11 clinical pathologists (or consultant grade clinical scientists) with secretarial support, 24 MLA's (12 of which have venepuncture or general pathology reception duties), a business manager (and administrative assistant) and an information technology manager (computer support). There are also another 28 MLSO's, 8 MLA's and 4 clinical pathologists employed by the Public Health Laboratory Service (PHLS) which shares accommodation with the NHS trust pathology service. This provides all clinical microbiology and virology services for the Trust Y (and other local hospital trusts) on a contractual basis. The pathology specialities of haematology, blood transfusion serology, biochemistry (clinical chemistry), immunology, and histopathology (which includes histology, cytology and neuropathology) are provided by the trust pathology laboratory (note - this study involves only the MLSO's employed

by NHS Trust Y, and does not include those employed by the PHLS which has undergone separate restructuring to NHS pathology).

The numbers and grades of MLSO's in each pathology speciality are given in Appendix D. An important aspect of this MLSO group was that 20 (31%) had been employed in the NHS for over 15 years, and therefore held a considerable body of knowledge and experience. So the initial interest which had led to observations on the changing work and role of MLSO's, and their possible links to the NHS reforms, could therefore be further examined by drawing on the knowledge and experiences of this group of NHS MLSO's. This has led to the three main aims of the case study, which have been to address the following questions;

- i) What is the position and role of medical laboratory scientific officers (MLSO's) within the NHS?
- ii) What has been the impact of the NHS reforms (as outlined above) on medical laboratory scientific officers (MLSO's), both as employees and as a profession?

Then also, by utilising the experiences of the workers from a comparable private sector, commercial laboratory, it was possible to consider a further question, which was;

- iii) Are there any similarities or differences in the position and role of medical laboratory scientific officers within the NHS and their private sector counterparts?

In order to address these questions the methodology of the study had first to be considered and reviewed.

6. STUDY DESIGN AND METHODOLOGY

6.1. Rationale

This research is a case-study utilising a number of complementary methods, including participant observation, qualitative interviews and the analysis of documentary sources. This type of approach has been used because it is well proven for the analysis of occupational groups (Bell 1993, Yin 1994). This chapter highlights the theoretical and practical issues encountered, the choices made and the considerations involved. There are elements of both a realist (positivist) and phenomenological approach and this allows for a broader evaluation of the research questions than by single method analysis.

An important feature of this study, consistent with other case-study research, is that it draws upon a variety of research instruments and methodologies. Fieldwork is the basis of case-study research and is concerned with the study of subjects within real organisations or social situations and relies heavily upon observation and participation with the subjects of the study (Burgess 1984). Emphasis is placed upon understanding the meanings and significance of people's behaviour and feelings (Bell 1993, p10). This study shows not only the formal, structural occupational changes that have occurred as a result of the NHS reforms (the positivist approach), but also how these changes whether real or perceived, have had an impact on the people involved (MLSO's), and also what their views are concerning this (the phenomenological or social constructionist approach, see Berger and Luckman 1966).

A significant part of the fieldwork involved in this study has been the use of semi-structured interviews with 'key informants'. This approach is pertinent to the study of a

particular situation or organisation (Casagrande 1960, Conklin 1968, Nicholls and Beynon 1977, Whyte 1981, Ball 1984). Social anthropology has contributed in this area, and it has been argued that the researcher's knowledge of the situation under study is vital in the selection of informants (Mead 1953). The use of a relatively small number of interviewees is valid in this type of study as it is the 'specification' of the informant which is important; as Mead remarked "the validity of the informant depends not so much upon the number of cases as upon the proper specification of the informant...." (Mead 1953, p.645). The process of selection of individuals for a field study is therefore different than that of statistical sampling for a survey research project (Burgess 1984). Informants in this study have been selected for their knowledge of the research situation and have therefore been selected using the researcher's own criteria. They have been used to complement observational data and guide the researcher into other areas of the study.

As previously noted, Participant Observation (Ethnography) within the MLSO group prompted the initial interest and was therefore the starting point of the study. In this technique the researcher is allowed a first hand account of a given social situation by participation within it, and as a member of the occupational group (MLSO's) in the study, the researcher fits into this model. This has given the researcher an insight into the participant's interpretation of various situations; "the participant observer gathers data by participating in the daily life of the group or organization he studies.....and discovers their interpretations of the events he has observed." (Becker 1958, p.652). Burgess (1984) pointed out another advantage of participant observation, as the data is collected "on situations as they occur rather than on artificial situations (as in experimental research) or constructs of artificial situations that are provided by the

researcher (as in survey research)", and that its value "lies in the opportunity that is available to collect rich detailed data based on observations in natural settings." (Burgess 1984, p.79). The researcher has therefore been able to collect different accounts of the same situation and compare them, and then evaluate and analyse them together.

This study has adopted a flexible and appropriate range of methods in order to minimise the problems associated with the validity of case studies, for which the use of 'multiple strategies' (Burgess 1982) has previously been recommended. This approach is based upon a technique termed 'triangulation' (Campbell and Fisk 1959, Webb et al.1966), which has been used in psychology work. In this research, Denzin's (1970) 'between method' triangulation has been used as this involves the use of various methods in relation to the object of the study.

Although this type of participant observation can be construed as being subjective, it has played a vital part in the choice of topic and access to data and informants, and has therefore been a key element in this study. Webb et al. (1966) noted that there was potential bias in all data collection methods (interviews, questionnaires, observation, records and physical evidence), and recommended the concept of 'convergence of data' (that is, convergence of data from different methods and different data within the same method). Again, the use of different methods to examine the same situation is advised. Zelditch (1962) has compared the collection of information using different methods (tabular form, see Zelditch, p.576 or Burgess 1984, p.162). In order to minimise potential bias this study has observed the above recommendations, and demonstrates a 'convergence of data' from observational, interview and documentary sources.

6.2. The Research Instrument

Following the initial interest and observational data gathered by the researcher, a literature investigation was carried out to gain more information on the topic. This consisted of an on-line computer search, the strategy for which included the examination of various databases including Medline and CINAHL (from 1974 to 1994), and also TALIS (available through the University of Central Lancashire Library Service). The keywords used in the search included: laboratory, pathology, biomedical science, laboratory assistant, laboratory technician, and medical laboratory scientific officer/MLSO. The librarian of the Institute of Medical Laboratory Sciences (IMLS) was also contacted with regard to any relevant texts. The computer search found very little substantial material concerning the history of medical laboratory scientific officers (MLSO's). However, the IMLS librarian supplied three relevant publications. These historical accounts of the occupation of MLSO's and the development of its 'professional' body were reviewed (notably Farr 1982 & 1992). The early history of MLSO's in general was elucidated from the Institute of Medical Laboratory Sciences (now Biomedical Science) archival material ('The Gazette') and literature sources, whilst a more recent view was obtained from nationally available documentary evidence (laboratory based publications such as 'Medical Laboratory World' and more recent copies of the IMLS 'Gazette'). These have been used to provide a background to the study in order to illustrate the occupation's development through time from its early origins, and also to examine the relationship it shares with the medical profession as reported in this literature.

In order gain further data which could be used to address the three research questions, interviews with 'key informants' had to be arranged. As the researcher is a senior MLSO at hospital X with over seventeen years of experience working within the pathology laboratory within this hospital, he had the dual role of participant observer and 'key informant'. Permission and access to survey and interview the MLSO group was gained formally in writing from the Chief Executive of the Trust and also from the Pathology Business Manager. Access to individual MLSO's was relatively straight forward as the researcher was known to most of the MLSO's at the study site.

In order to obtain a list of potential interviewees, an initial survey using a short, confidential questionnaire was sent to all of the 63 NHS MLSO's at the case study laboratory, covering all grades, specialities, ages and both sexes. This questionnaire (Appendix F) fully explained the purpose of the interviews, gave assurances of the anonymity and confidentiality of any respondent information and also gave an indication of the respondent time that would be involved. This survey contained questions regarding the respondent's; sex, grade, laboratory department/speciality, length of NHS service and also included the opportunity to volunteer for interview. Of the 63 questionnaires sent out, 51 were returned giving an excellent response rate of 88 %. These replies resulted in 16 prospective interviewees, and from these 8 interviewees (7 MLSO's and a pathology manager, see below) were selected, each with at least fifteen years experience of working in NHS pathology laboratories. This selection was carried out on a cross-sectional basis to cover all MLSO grades (MLSO 1,2,3 and 4) and all pathology specialities (haematology, biochemistry, histopathology, immunology) but excluding microbiology, as MLSO's in this department are employed by the PHLS, and not NHS, which would have introduced another variable. The pathology business

manager, because of his unique position and NHS pathology background, was automatically included in the sample.

The sample drawn consisted of;

2x MLSO grade 4 (haematology - male, immunology - male)

1x MLSO grade 3 (biochemistry - female)

2x MLSO grade 2 (haematology - male, biochemistry - female)

2x MLSO grade 1 (biochemistry - female, histology - male)

1x Pathology Business Manager (ex MLSO grade 3 - male)

Semi-structured interviews were then carried out on this sample, in the pathology seminar room at Hospital X in the period from February 1996 to November 1996. The interviews followed a basic schedule (see p.20) but formal questions were kept to a minimum, with occasional prompts being used to elicit more in-depth information. Each interview lasted for 30-40 minutes. As all of the interviewees knew the interviewer there was a potential for bias, therefore in order to minimise the effect of this on the data collection, the interviews were audiotaped, with the confidentiality and the overall purpose of the study being stressed prior to the interviews. Semi-structured (or focussed), rather than fully structured interviews were used because of the advantage of the respondent being able to give their 'own' responses and not being led by pre-formed researchers answers (Polgar and Thomas 1995, p.142). This, together with the interviews being recorded by audio tape, served to minimise interpretive bias. It should be noted that there were no refusals to participate due to the use of audio recording.

6.3. Interview schedule

(prompts in brackets):

1. Personnel details (Sex, Age, Department)
2. Brief personal history
3. Job entailment (tasks, duties, responsibilities, relationships)
4. Professional aspects of MLSO work (duties, responsibilities)
5. Main changes seen over the last 15 years - explain (how, why)
6. The future for MLSO's
7. Any other comments

An interview with a laboratory manager (male) from a comparable private sector pathology site in the locality, who was known to the author, was also carried out in the laboratory's library. This laboratory was small (only 8 laboratory staff in total, 3 MLSO's and 4 MLA's) compared to the NHS site at hospital X, but it was part of a significant national private sector pathology company. The basic interview schedule previously used for the NHS MLSO's was modified slightly for this interview, again the interview was recorded on audio tape and lasted for 40 minutes. It is important to note that the private laboratory manager interviewed had also previously worked in NHS laboratories for at least ten years, and so was well qualified as a 'key informant'. This meant that the information obtained from this source, although not statistically valid, was of great value and could give a useful insight into the similarities and differences of this sector company.

In order to corroborate the evidence given by the NHS and private sector interviewees, and also to add further evidence, a pathology equipment sales manager (male), again

known to the author, was interviewed. This interview took place at the manager's home, and he also did not object to being recorded on audio tape. This person had previously worked in the NHS laboratory at Hospital X in the 1970-80's, and more recently in the course of his work had travelled around visiting many pathology laboratories, both NHS and private. He was ideally placed to substantiate the information given by MLSO's and managers in both sectors.

6.4. Interpretation and Analysis

The analysis of the initial participant-observational data involved the grouping together and listing of the main issues seen. This was then repeated to ensure that all relevant data had been included. The manipulation and interpretation of the interview data involved the transcription of the interviews in sections conforming with the interview schedule (see p.20), from the audio tapes into written form by an experienced audio typist. These transcripts were then verified as correct by the researcher, or amended if necessary. The transcripts were then repeatedly scrutinised and re-evaluated for prominent and recurring issues and themes (this was checked by an NHS MLSO who was not involved in the study). These were then listed and arranged into a simple format following the interview schedule sections, based on the model given by Easterby-Smith et al. (1991, p.105-112), who utilise the content analysis approach of Holsti (1969). The analysis was completed by the discussion of the prominent themes encountered from the observations and interviews carried out in the case study. In order to address the three research questions, the conclusions have been drawn from the discussion.

6.5. Constraints and dilemmas of the Study

The problems and constraints involved in any research project have previously been identified (Phillips and Pugh 1987). Several constraints specific to this study were encountered. First, were the ethical aspects of participant-observation (Schwartz and Schwartz 1955, Schwartz and Jacobs 1979). Undertaking a study involving one's work colleagues will always incur some form of suspicion. This may range from not giving away 'the truth' when responding to a question, to giving the response which is perhaps the one that is hoped for, or even not giving a response at all. In contrast, it may be argued that some respondents are more likely to comply with a researcher they know and trust than some anonymous figure (Roy 1970). Another ethical aspect was that of commercial sensitivity. This was particularly perceived as being important when interviewing the private sector respondents. As the researcher held a dual position, that of part-time researcher and also of senior MLSO within the NHS trust in the study, it was felt that this had some influence upon the responses given by the private sector interviewees, especially the pathology manager. There was an apparent underlying suspicion of the researcher's motives; were they purely research orientated, personal or was there some other motive derived from the NHS trust managers?

Some of the original aspects of the study had to be abandoned due to practical difficulties. It was originally proposed that the role (duties and tasks) of MLSO's could be analysed using a form of diary-notebook. However, when this was piloted by two laboratory workers who were not involved in the study, it was found to be both time-consuming and impractical. Following further consideration, it was deemed that information of a comparable nature could be elucidated by observation and interview. There have also been certain practical difficulties associated with interviewing

laboratory workers from the private sector, including geographical difficulties and a lack of response. Originally it was envisaged that a comparable number of MLSO's from each sector would be interviewed. However, the lack of response from private sector MLSO's led to a reduction in the number of interviewees from this sector. Problems associated with obtaining archive material, both from the MLSO professional body and the Department of Health, were also encountered. These, especially with the Department of Health, were mainly concerned with the ubiquitous bureaucratic and time-consuming processes involved in 'finding the right person' who could supply the required information.

The dilemma of internal validity has been addressed by the development of theory from the presented evidence. Although this aspect is open to influence from the researcher (bias) and a certain amount of 'inference', the use of 'data triangulation' (Webb. et al. 1966, Paton 1987) with the emphasis on the information given by 'key informants' has been used to minimise this. Nonetheless, this study represents a historical snapshot which is particularly significant in the development of this group of MLSO's and which will be relevant to NHS MLSO's in general. There is nothing to suggest that the pathology laboratory used in this study is in any way untypical, or that further case studies carried out on other groups of NHS MLSO's, should not give comparable results to this study.

7. BACKGROUND TO THE STUDY

7.1. MLSO's as a Profession

Most of the literature on professions is concerned with the 'classical' professions (those with the greatest social prestige, autonomy, remuneration and occupational control), such as medicine and law. Apart from work on nurses, there has been relatively little research on the so-called 'paramedical' professional groups (Freidson 1970), the main exceptions being Larkin (1983) and Witz (1992). The professional aspects of MLSO's have not been previously studied, although Homans (1989) has examined the gender aspects of their employment.

Freidson (1970) uses the term 'paramedicals' to refer to health care occupations who are controlled by the medical profession. The group in this study (MLSO's) comes under this term. According to Freidson (1970), this control (which is particularly relevant to MLSO's) is exerted in a number of ways: most of the technical knowledge acquired by paramedical workers in their training has often been first discovered or approved of by doctors; the tasks and duties performed by paramedical workers assist in diagnosis and treatment, rather than actually focusing on these areas; paramedical workers tend to be subordinate to doctors, their work being performed at the request of a medical practitioner; and the public perception and associated prestige is much less than in the medical profession. Therefore in attempting to achieve greater status and prestige many health care groups have pursued a professionalisation strategy, in which they attempt to gain 'professional' characteristics.

Dawson (1992, p.32) has summarized the characteristics of professional groups as having; a commitment to a distinct body of knowledge, coupled with a specific and

lengthy training which has a restrictive entry. They also have a prescribed code of ethics and standards of behaviour, a self-proclaimed concern for client groups, and are under peer group evaluation, control and promotion. From this, occupations thus wishing to become professionalised (the process of achieving professional status), such as MLSO's, will therefore attempt to gain these characteristics and certain exclusive privileges including: the sole right to award registration to qualified practitioners; the right to use a specific, protected title; the right to define and perform specific duties; the right to self regulation (investigating complaints and administering discipline); and the right to independent practice (self employed, without formal supervision) (Haiven 1996).

The professional body for MLSO's (IBMS) argues that MLSO's have achieved all of the above characteristics and privileges. However, it is the latter in each case, peer group evaluation, control and promotion, and the right to independent practice, which are the most difficult to obtain. Independent practice for MLSO's is almost impossible as most of the work performed by this group has to be carried out within the confines of clinical laboratory and is at the request of medical (or veterinary) practitioner. This involves the use of modern scientific equipment, which has to be constantly maintained to ensure both analytical quality and health and safety aspects. Also, most of the MLSO's working in NHS pathological laboratories do so as employees in groups, not as independent individuals. However, there is some scope for MLSO's to hold independent status, through the use of locum work. In this case, private sector recruitment companies will employ MLSO's to work within NHS or private sector laboratories. Individual MLSO's are able to choose where they wish to work and so have some control over their employment, although their work is still performed under

medical request, and as doctors are usually the heads of pathology departments, they are also under the control of and accountable to the medical profession (this is consistent with Freidson's 'paramedical' definition). Added to this is the increased accountability and control over MLSO's which is being generated by general managers by their new functions and management structures (particularly clinical directorates).

Organisations vary but many often include some type of bureaucratic structure, such as those found in the fields of health, teaching and government. It follows that the employees of organisations who are also members of a professional group, must participate in two distinct systems of activity. Both institutions, the profession and the organisation, will attempt to exert some control over the groups work activities. The professional body will establish standards and norms for the conduct of professional activities, and the employing organisation will specify work tasks, duties, objectives in some form of control mechanism. In order to analyse the position of a professional occupation within a large organisation, such as MLSO's within the NHS, one must take into account all of these relationships, not merely that between the individual and the organisation (Kornhauser, 1962). Harries-Jenkins (1970) stated that essentially there is a contrast between the 'vertical' structure of bureaucratic organisations and the more 'horizontal' structure of professions, and as professionals are employed within an environment "which rests on principles of organisation fundamentally different from those of their profession" (Harries-Jenkins, 1970, p54), then some form of conflict must be generated between the professionals and their employers. Conflict between professionals and bureaucratic organisations (usually involving the managers of the organisation) has been previously studied. These studies have examined various areas of role conflict, such as role-incongruity amongst professionals, role-strain, the evaluation

of professional behaviour, the manner of professional-client relationship modification within organisations (Merton 1957, Etzioni 1961 & 1969, Kornhauser 1962, Richard Scott 1966).

As MLSO's in the NHS are state employees rather than independent practitioners, their work is under the general supervision of the medical profession, and is important enough to be regulated in the interests of quality and public safety. MLSO's are now increasingly more accountable to general managers in the NHS. (It should be noted that MLSO's in the private sector are accountable to their managers, but are often not directly supervised by consultant pathologists, and it could be argued that they hold a more independent status). MLSO's have a recognised professional body and are committed to their 'professional' peers, and to performing their duties in the best interests of the public. From this it could be argued that a dynamic tension exists, one of co-operation and resistance, between the state and an employed group, such as MLSO's in the NHS. This was suggested by Kornhauser (1962), who looked at scientists in industry and warned of the detrimental effect to both the occupational group and the organisation. However, Dawson (1992, p.34) has stated that this tension is less intense than has been suggested and she also proposes that it is the adaptiveness of people as individuals and organisational members which is essential in alleviating this conflict. This study of MLSO's has provided an interesting group in which to examine such adaptiveness. Parkin's comments on semi-professional groups are also relevant to MLSO's:

"These are occupations that make claims to rewards on the basis of formal qualifications, but which have been unable to secure full professional closure by establishing a legal monopoly or control over the number and quality of entrants. Partly as a result of this incomplete professional closure these.....groups are also

liable to resort to the tactics of industrial solidarism as a means of advancing their claims." (Parkin 1979, p102).

Of further significance to MLSO's, is that they show some of the reasons for the lack of success by the 'semi-professions' to achieve 'complete professionalism'. These reasons include: the lack of a large complex knowledge base (Etzioni 1969); the increased number of women represented in these occupations - see Appendix G (Etzioni 1969); and the 'proletarianization' of these occupations (Braverman 1974, Derber 1982), which can all be attributed to MLSO's.

7.2. Professional aspects of MLSO work

The activities of MLSO's within the NHS is supported by professional codes of conduct set out by the Institute of Biomedical Science (IBMS) and the Council for Professions Supplementary to Medicine - Medical Laboratory Technicians Board (see appendix A). State registration is a legal requirement for NHS MLSO practitioners, and is currently conferred by the CPSM MLT Board which has a statutory duty to protect the public from professional misconduct and physical harm. Gross misconduct, if confirmed by the CPSM, would result in the guilty practitioner being removed from the national register, and the loss of ability to practice in the NHS.

7.3. Concepts of MLSO 'role'

A commonly used framework in the study of occupational groups is that of 'role' analysis. There are a number of ways in which to look at occupational or professional 'roles'. It is not always possible to simply demonstrate a single occupational role, individuals holding positions within an organisation will often have more than one role.

There are a number of different views and opinions amongst social scientists on the analysis of 'role'. Traditional sociologists have examined 'role' as specific behaviours occurring within certain social contexts (Horrocks and Jackson, 1972), in other words, a 'role' is the product of social stimuli producing socially desirable behavioural responses. A individual's involvement in a 'role performance' will be influenced by some form of motivational factors. Motivation to perform a role may be determined by internal (self) or external (occupational, professional) factors (Horrocks and Jackson, 1972, p.111). These motivational factors have been termed the 'locus of control' of a person's behaviour, which can be described as a psychological phenomenon which is based on the interpretations derived by an individual of himself and his actions, as a result of how well he can direct and control his environment. This leads on to the view that a persons' 'role' within an organisation or occupational group may be influenced or affected by factors relating to that person as an individual (internal), as an employee and as a member of an occupational group or association (external or environmental factors), and is consistent with Kornhausers' (1962) dynamic tension concept noted earlier. In contrast, it is also possible for an individual or group to influence or affect a change within their environment.

In order that an organisation may achieve its goals, the work of its individual members must be structured into coherent relationships and patterns of activity. This leads to the assumption that "a role is the expected pattern of behaviours associated with members occupying a particular position within the structure of the organisation" (Mullins 1993). Huczynski and Buchanan (1991) support this general definition, and have stated a typology for the different contexts in which it is utilised. They consider four concepts for role definition, those of; prescription, evaluation, description and action (Huczynski

and Buchanan, 1991 p327), which are all inter-related and interdependent, and provide a basic framework for 'role' analysis.

In the descriptive context, role may be analysed by determining the actual duties performed by an individual. These duties or tasks, are observed and noted, and then analysed to determine the content of the work, and the nature of any interaction and relationships within the role set. This approach is useful in determining the contrast between an individuals' prescribed tasks and those which are actually performed, and hence will highlight any areas of 'role conflict'. Role analysis has also been carried out by the the examination of the actions involved in the role performance. The prescriptive role, as determined by a job description, is carried out by means of specific set of actions in order to achieve the expectations of the organisational position held by the individual. The action approach has been supported by a number of workers including Weber (1964), Berger and Luckmann (1966), Rose (1962), and Cohen (1968). This approach is concerned with the study of behaviours, actions, interactions and their meanings.

More relevantly for MLSO's, is that 'roles' have historically been defined as positions or status levels existing within socially structured organisations (Horrocks and Jackson, 1972). Divisions of labour occurring within the organisation provide differential levels of responsibility. The allocation of status to certain structural positions provides a hierarchical structure within the organisation (see Appendix C). Individuals will become members of a social group (such as MLSO's) by assuming and performing the required acceptable role. The concept of role is therefore particularly important to the functioning of groups and in the understanding of group behaviour. Hence some form

of role structure is essential in providing a base for team working and effective activity, both within and between working groups in an organisation (such as MLSO's within the NHS). Individuals may assume one or more roles within a working group or organisational setting.

From this it can be assumed that the role played by a particular person in one group, may be substantially different from the role that the same person performs in other groups. Drawing from this, any individual will have a number of role-related relationships with people external to his own role group. This has been termed a person's 'role set' (Mullins 1993), and may include members of other work groups, trade union officials, customers, clients or any individuals external to the work group with whom the person concerned has some form of contact. This is relevant to the MLSO group in the study. The expected role of MLSO's depends on a number of factors which may be internal or external to the organisation (NHS). Internal role expectations include formal duties and obligations such as those contained within job descriptions, contracts of employment, organisational standards, rules and regulations. However, groups, such as MLSO will also be influenced by external role factors, such as the rules and regulations stipulated by the membership of professional and state registration bodies, and also trade unions. The extent to which the internal organisational role factors conflict with the external professional factors is often a source of stress for professional groups working within large organisations (Kornhauser 1962, Mullins1993).

This case study has utilised a descriptive approach to examine the actual work duties of MLSO's, and this has been further expanded by the the interview data on the views and

feelings of MLSO's at the case study hospital X. The descriptive model of task and duty analysis has been employed in this study because it is straightforward, relatively easy to assess, and this methodology is consistent with the researcher's positivist scientific background. This has then been set against the interview data which gives an in depth analysis of the views and feelings of MLSO's about their prescribed duties, role and relationships.

7.4. The work of MLSO's in the NHS

This section examines the work of MLSO's, and draws upon observational data and evidence given in the professional body (IBMS) literature. Medical Laboratory Scientific Officers (MLSO's) work in pathology laboratories (both in the NHS and private sector), carrying out pathological investigations (often referred to as laboratory 'tests' and involve certain analytical techniques, which are either automated or manually performed) which enable doctors to diagnose disease, evaluate the effectiveness of their treatment, or some may perform research into the causes and cures of illnesses. MLSO's must provide accurate and efficient test results as patients lives depend upon their work. The importance of their work is often overlooked or unknown by the general public. While most of their work is routine and is being increasingly automated, certain investigations are demanding and challenging, requiring a significant skill level. The quality assurance of pathological investigations and the development of new or improved techniques is a major part of senior MLSO work.

There are currently four main areas of NHS hospital pathology work within which an MLSO may be employed. The Biochemistry (Clinical Chemistry) laboratory provides the study of chemical substances found in the human body. Normally, the

concentrations of these chemicals are controlled and maintained within delicately balanced ranges. However, disease states can alter this balance and cause concentration changes which may be detected using various analytical techniques. The investigations (or tests) performed in this laboratory are mainly carried out on patient's serum (i.e. clotted blood without the cells), but urine and faecal samples may also be used in certain investigations. There are hundreds of different tests carried out by MLSO's in this department including; serum cholesterol assay to screen for predisposition to heart disease, serum and urine sex hormone levels to screen for the causes of infertility, liver and kidney function analyses, serum glucose levels to screen and monitor diabetes, and various hormone assays to screen for adrenal and thyroid disorders. An increasingly important area of work in this laboratory includes the screening and monitoring of drug levels within the body (both therapeutic and abuse drugs).

Haematology is the branch of medical science concerned with the study of blood diseases. MLSO's in this department perform many different tests including; counting and sizing of the blood cells (full blood count), screening for anaemia and abnormal blood cells, blood clotting times, screening for inherited blood disorders, screening for blood parasites, and iron and vitamin assays. The MLSO's use various techniques such as electronic particle analysers, radio isotopes, electrophoresis, column chromatography, high pressure liquid chromatography and clinical microscopy. From the results of these and other tests, certain conditions (such as blood loss, anaemia, leukaemia, malaria, glandular fever, thalassaemia, sickle cell anaemia) may be identified. The Blood Transfusion department is often combined within the haematology laboratory in most NHS hospitals, and the MLSO staff usually rotate between the two. Blood transfusion work involves the determination of patient blood groups and cross-

matching suitable donor blood to replace patient blood lost during operations or trauma. If this is performed incorrectly it may have fatal consequences for the patient. Other important aspects include the screening of pregnant women for abnormal antibodies which may affect the unborn baby, and providing blood products (including plasma clotting factors and platelets) for the treatment of clotting disorders (such as haemophilia). Most of the work in this section is labour intensive and currently not automated, and is usually performed by MLSO's working unsupervised.

Histopathology involves the microscopic examination of tissue samples removed from the human body whilst alive or dead (post-mortem). MLSO's in this department perform certain procedures including the fixing, processing and embedding of the tissue into wax. From this, very thin sections of the tissue are cut, mounted on to microscope slides, stained and then examined for abnormal morphology. Many different processing and staining techniques are used in order to provide valuable information regarding the origin of the cells and the type of tumours found in the tissue samples. The techniques may also involve the use of electron microscopic studies of the structures within cells. This MLSO work involves a certain amount of skilled dexterity, but is liable for automation. Most of the clinical microscopy in this department is carried out by consultant pathologists and not MLSO's. However, there has been a lot of recent national debate on professional boundaries within histopathology laboratories (see Ashworth 1994), with medical pathologists fighting for the right to perform certain tasks, such as the 'cutting up' of tissue samples before processing and staining. The pathologists' case has been supported by the laboratory accreditation body, CPA, which will probably suffice for the time being, but at a time of rationalisation of departments and duties, it is a conflict which will not disappear.

Cytology is a section within histopathology, where collections of free cells (not within tissue samples) are examined. These cell samples are from many sources, the most common being from cervical smears, which are used for the early detection of cervical cancer in women. Skill mix of laboratory staff is an important consideration in this section, as it is one area of laboratory work which is often put into the spotlight, usually to highlight a failure in the cervical smear screening system. This negative image is often the only publicity afforded to MLSO work. Another section of histopathology, neuropathology, deals with samples from brain (post-mortem samples), nerve and muscle tissue. Again similar histological techniques are utilised to assist in microscopy and diagnosis, with the end report consisting of clinical information from the medically-qualified pathologist.

The Immunology laboratory is concerned with the investigation of abnormalities within the body's immune system including; allergy (over-reaction) - hayfever, auto-immunity (reaction to own body) - rheumatoid arthritis, and immune deficiency (lack of reaction) - AIDS. The techniques involved identify and quantify the relevant antibodies in the patients blood, and also study the types of blood cells involved in the immune system. The investigations in this department used to be very labour intensive, however with advances in medical technology automation is increasing, and immunoanalysers are now available, which again means that laboratory assistants (MLA's) may be utilised for various duties.

The Public Health Laboratory Service (PHLS) originates from the 1930's, when it was set up as an emergency wartime bacteriological service following the threat of

bacteriological warfare (Williams 1985). The Armed Forces, Ministry of Defence and Medical Research Council all played a part in its establishment. Major bacteriological warfare never became a reality and following the Second World War, having gained extensive skills and experience in bacteriological disease diagnosis and treatment, the PHLS developed into the main laboratory body for the investigation and control of infectious diseases. Its laboratory network developed throughout the country, and PHLS laboratories were incorporated into schools, university and hospital laboratory premises, although they did function as totally separate entities. In the early 1960's the idea of integration with hospital (NHS) bacteriological laboratories was proposed, and although there was some peripheral integration with cross-cover of technical staff, this never really occurred. The PHLS today remains a distinct employing body, but the laboratories are often shared partially or completely with NHS pathology laboratories, with some of their services being purchased via contracts with the local NHS trust. The PHLS employs many MLSO's, but it should be remembered that some NHS pathology laboratories perform bacteriological investigations using their own (that is, NHS employed) MLSO's. This can lead to confusing situations for staff. The PHLS has developed its own management and organisational structure, which although it is separate from the NHS, does have some similarities. This serves only to confuse the situation of NHS MLSO's, and for that reason the MLSO's employed in the PHLS have not been considered for the purpose of this study. However, a brief description of their work is included here for completeness.

The PHLS laboratories include the departments of Medical Microbiology (Bacteriology) and Virology. Microbiology involves the study of pathogenic(disease causing) micro-organisms. The laboratory is concerned with the diagnosis, treatment

and control of the spread of infection within individual patients and the community. The demonstration of these pathogenic micro-organisms (such as bacteria, viruses, parasites and fungi) requires experienced MLSO's to carry out procedures including microscopy, culture and serological techniques. Swabs and samples from various bodily sites are sent to the laboratory for examination including; throat swabs to screen for tonsillitis, pus swabs to screen for wound infections, blood to test for septicaemia, urine to test for cystitis and cerebrospinal fluid to screen for meningitis. When a pathogenic organism is identified, its sensitivity to various antibiotics is assessed, in order to determine the correct treatment. This laboratory is also concerned with the examination of environmental samples (such as food and water samples from rural and community sources) and screening against the spread of communicable diseases (such as typhoid or tuberculosis). The MLSO work of this department is quite labour intensive, however some automated techniques have been recently introduced, and laboratory assistants (MLA's) have been introduced to carry out non-scientific duties.

Virology is a relatively new pathology speciality and is concerned with the diagnosis and prevention of viral disease. MLSO's in this department perform a variety of tests to aid the diagnosis and treatment of suspected disease causing viruses, these include; the detection of the virus itself and/or detecting antibodies to the virus in the patients serum. Diseases screened for include; influenza, rubella, measles, mumps, chickenpox, and more topical ones such as human immunodeficiency virus (HIV) and viral hepatitis. As there are no instant cures for viral diseases a large part of the work consists of community screening and identifying susceptible communities.

Although all pathology departments deal with routine and emergency investigations, some urgent tests are more clinically relevant than others. Certain biochemistry, haematology and blood transfusion tests are constantly in demand from clinicians providing a 'round the clock' emergency medical service. NHS laboratories have therefore always provided 'out-of-hours' emergency cover for pathology tests on demand ('on-call'). These tests were originally performed by trainee pathologists, however as time progressed, this duty has been taken over by MLSO staff (see later case study data).

7.5. Recent Changes to MLSO work

Various developments in pathology have been reported in the relevant sources. They note that the Biochemistry and Haematology departments utilise sophisticated instruments, developed by modern medical technology which are capable of measuring very low concentrations of bodily chemicals and cells. These analytical instruments are often computer controlled and have data storage facilities. Many types of analytical techniques are used including; atomic absorption spectrophotometry, high pressure liquid chromatography, radio isotopes, ion selective electrodes and various form of electrophoresis. This technology is constantly being updated and developed by manufacturers using feedback from MLSO's, who have developed fault-finding skills for much of the automation used. However, this does mean that the work of this department can be very routine and monotonous, and due to its highly automated nature lends itself to being performed by less skilled staff (such as medical laboratory assistants - MLA's). The technology in these departments is sophisticated and under constant automated development, which has meant that MLSO's have developed other skills (such as fault-finding or computer-related techniques). This can be regarded as a

'shift in skills' or 're-skilling', rather than a straight forward deskilling process. These issues are further examined in the discussion section.

7.6. Commercialization of the NHS hospital services

7.6.1. Definition

For the purpose of this study, the 'commercialization' of the NHS hospital service has been represented by a framework of overlapping concepts; those of privatization, managerialism and the introduction of the 'internal market' reforms. Whether true 'commercialization' will be ever be achieved in the NHS, so that there is equal competition between the NHS and private sector, is a matter of on-going debate, and with the Labour government now in office it is doubtful that this trend will continue.

7.6.2 Privatization in the NHS

In broad terms, the concept of privatization has been used to describe policies which aim to limit the role of the public sector and increase the role of the private sector, and at the same time improving performance within the remaining public sector (Young 1986). The state, under the Conservative government, still accepted responsibility for health-care provision.

Le Grand and Robinson (1984) have argued that the state can intervene in welfare provision in three ways; provision, subsidy and regulation. In which case privatization would result from a reduction in state activity in one of those areas. It is well documented that the Conservative government of the 1970-80's has sought to create a favourable climate for privatization. There have been several reasons for this; the governments favour of individual choice in a 'free market', direct influence by the doctrines of the New Right, the influence of government concessions to the private

sector, and wider political influences. A key point in government statements on the NHS has always been the emphasis on finite public funds, which has been stressed by all parties. This has led to the call for additional private sector funding (which it now appears is also being proposed by the new Labour government in 1997) expounding the low expenditure on private health care in Britain compared to mainland Europe (Mohan, 1991). This is in addition to the move for greater efficiency, better management and a more business-like approach as proposed by the Griffith's report (DHSS NHS Management Inquiry, 1983). Interesting innovations in this area have been the calls for greater collaboration between the NHS and the private sector, for income generation schemes within the NHS, and for charitable support for the NHS.

The move for greater efficiency or giving the taxpayer 'value for money' was one of the Conservative governments major forces in initiating change within the NHS (Annual Report on the Health Service, HMSO 1985). The main initiatives concerned with the 'value for money' move have concentrated on producing more or better services from the same amount (or less) of resources. A main proposal introduced to achieve this was competitive tendering. This involved obtaining a supply of goods and services from the private sector, and was unknown in the NHS prior to the 1980's Conservative rule. The first examples included the switch from the in-house production pharmaceuticals to direct purchase from private manufacturers, and similar changes in the sterile supply and maintenance services. These were followed by hospital cleaning, laundry and catering services. Health Authorities were instructed to test the efficiency of these services by putting them out to tender (HC(83)13, DHSS, 1983b). Guidelines and rules were given to ensure fair competition, with emphasis being placed to show that the exercise was not just a vehicle to lower base-line running costs for in-house services.

This however, was a common perception of those within the services involved. The Government viewed the tendering programme as a success, claiming that health authorities had saved a great deal of money which could be used to improve patient services (DHSS 1985, Circular HC(85)05). The scheme was also successful in stimulating and educating managers to consider efficiency savings as part of their everyday duties, and in increasing NHS employees awareness of external competition (Talbot 1986), a ploy which has been used effectively in the case of pathology laboratories (as demonstrated in this study).

A central argument for competitive tendering that appealed to managers, was that savings could be achieved. The source of these savings may be disputed: Forsyth (1982) has argued that reduction in costs is due to the constant innovation process and trade union intolerance in the private sector; whilst Milne (1987) and Domberger, Meadowcroft and Thompson (1987) have suggested that it is the introduction of competition which induces efficiency savings. Cowan (1984) has argued that private sector savings are generated by better management. Critics of competitive tendering argued that the efficiency savings had been achieved at a price, that of quality. A decrease in service quality would occur by replacing already low paid workers with more part-time workers who had fewer benefits and employment rights than public sector employees. This criticism was also raised by some managers and health authority members (Haywood and Ranade 1985). However, now that NHS Trust managers have a mandatory duty to participate in minimum level cost improvement programmes (CIP) or cash-releasing efficiency schemes (CRES), within an environment of strict financial control, the emphasis is on achieving the required savings. Since the advent of the 'internal market' system (see later) the issue of quality has more recently been raised,

and contracts for services with NHS or private bodies, have quality clauses contained within them.

There has always been some co-operation between the NHS and private sector. Privatization is not a new phenomenon, it has occurred in various forms under both Labour and Conservative governments (Young 1986). When the NHS was founded well over 250 beds remained within the private domain. These were often used to treat NHS patients by private contract, relieving some of the burden on the public sector. More recent government policy has stressed the need for health authorities to plan for the incorporation of private sector facilities (DHSS 1981). Even more recently is the call for private finance initiatives (PFI) between the NHS and private sector agencies which is becoming relevant to pathology laboratories. In terms of scale the private sector is a minimal competitor in health services (7% of all in-patient admissions, and 6% of all acute beds in 1986 (Nicholl JR et.al. 1989)). It has been argued that the capacity of private hospitals will not expand significantly (Chaplin 1990) and that the restricted availability of consultants will compound this (Lawrence 1990).

Not only has the NHS been reformed, the private sector health care market too has also undergone recent changes (Rayner 1986). Although private medicine is relatively small compared to the NHS, it has emerged as a significant part of health care provision in Britain (Maynard 1984). The form of private medicine in Britain has shifted, and the move has been away from supplementary health care within the NHS or non-profit hospitals to independent bodies run by commercial companies external to the NHS. However private sector health care has run into problems. In the early 1980's, rising costs, increased market competition, conflicts between insurers and hospital groups and

accusations of profit-induced hospitalisation were seen (Rayner 1986). Government measures in favour the provision of private medicine were required to secure its position and restore confidence. The Conservative government of the early 1980's adopted 'Radical Right' (New Right) themes developed from the Institute of Economic Affairs which supported the contribution of private medicine in Britain. An expanded private sector was in line with 'Thatcherite' policy - reduced reliance on state spending, privatisation of state assets and increased personal self-reliance (Gamble 1983). Despite the Royal Commission's recommendation (HMSO 1979) that funding for the NHS was satisfactory, the government carried out investigations on insurance based schemes as used abroad.

The Conservative government of the 1980-90's, although having stressed the advantages of the private sector in relieving some of the burden on the NHS, never actually pressed for full privatisation, probably due to the widespread public unpopularity which this would have caused. However, other scaled-down models had been viewed with interest. Williams (1982) and Chubb, Haywood and Torrens (1982) indicated that more collaboration of NHS and private sector was required, whilst Maynard (1985) proposed that Health Maintenance Organisations (HMO's) as employed in some American states should be introduced. However, the model which attracted most attention was that put forward by Enthoven (1985a), an adviser to the largest HMO in America, the 'internal market' system. He suggested that incentives for efficiency would occur from the competitive exchanges based on contractual agreements between health districts. Earlier views on the competitive model (Manga and Weller, 1983) claim that proposals of efficiency in such models are just a cover for non-equity within the system.

Income generation schemes were introduced nationally in 1987 by the Health and Medicines Bill (DHSS 1987), although they had probably been around unofficially since the early 1980's (Mohan 1991). The reasoning behind the schemes was quite rational; hospitals having substantial assets, would not always be fully utilised (such as catering and laundry services) and therefore could allow people (such as staff, patients and visitors) to use these facilities for a fee which would go back into the health-care funds. In reality it was different. The sums raised were minimal (see NAHA report, 1988). Some critics also argued that hospitals would adapt their services for income generation at the expense of meeting local health care needs. These schemes did, however, put forward the notion that hospitals should perhaps concentrate on generating income from their primary business, that is, clinical activity. This points back to the market approach to health-care service provision.

The private sector has competed with the NHS on relatively equal terms for certain services including; health screening, residential care, pathology laboratories, and some GP services. One of the most serious areas of competition is that of private sector abortion clinics. private clinics perform around 50% of abortions (Higgins 1988). Despite this, it has been argued that the main pressure to review the quality of NHS services arose from professional and political influences, rather than competition from the private sector (Scheaff and Schofield 1990, p.63).

7.6.3. Managerialism and Griffith's

The major reorganisations of the NHS have involved some form of management changes. In 1974, following the National Health Service Reorganisation Act (HMSO 1973), and the previous paper 'Management Arrangements for the Reorganised

National Health Service', (HMSO 1972, known as the Grey Book), the first major changes were introduced. Following the Royal Commission (HMSO 1979, the Merrison Report), effective management was emphasised as crucial to the efficiency and effectiveness of the service. The Conservative government's views on this report were published in December 1979 in the consultative document 'Patients First' (HMSO 1979). This paper recommended that decisions should be made nearer to the patients (District Health Authorities should be set up, and the Area tier abolished), professional consultative systems should be simplified, unit management should be based at hospital level, and that planning should be streamlined. The Conservative government faced with ever increasing demands and costs for health care, examined ways in which these could be reduced or off-loaded. Proposals included: encouraging the use of private hospitals and support services contracts (domestic, laundry and catering) with the private sector (Levitt and Wall, 1984). Following parliamentary concern, the government began examine the financial and manpower levels in the NHS. This, together with growing impatience with consensus management, led the Secretary of State for Health to initiate a team to examine the situation, report their conclusions and propose solutions. Chaired by Roy Griffith's, Managing Director of the large commercial group, Sainsbury's, the team published its report in October 1983. The main findings of the report included: a lack of drive; a lack of accountability; and delays in decision making (DHSS 1983). The underlying theme of its solutions was to introduce what was thought to be, the best principles of private sector management into the NHS (Cox 1991). The report emphasised the importance of delegation, management budgeting, the involvement of clinicians in management, and consumer needs and satisfaction. This was in contrast to the established theme of medical paternalism and professional dominance. In June 1984, the Griffith's report proposals were implemented through the health circular HC(84)13

(DHSS 1984). The key issue in the implementation of the Griffith's report was the distinction between administration and management. Administration was viewed as servicing the needs of the professionals (Harrison 1986), whereas the theme in general management was to take overall responsibility for service provision -which would challenge the role of health professionals, particularly doctors. Griffith's supported a managerial approach of planning, target setting, and monitoring performance against pre-set limits. It was thought that this would ensure tighter control over professional performance and costs (Cousins 1987, Harrison 1988). The central characteristics of effectiveness, urgency, attention to consumer satisfaction, management budgeting and new approaches to personnel management (motivation, communication, reviewing and rewarding good performance - derived from the Human Resource Management movement) were promoted. Not only were fresh management techniques being introduced by the Conservative government, its underlying theme, derived from the competitive private sector, was one of changing managerial behaviour in order to control and discipline the labour force (Cox 1991). This was a culture change for the NHS. General managers would now be able to question professional roles and skill mix and ask, as in the case of nurses and some paramedical professions (such as MLSO's and radiographers), whether it was necessary that all of their duties and tasks should really be carried out by qualified staff (Harrison and Pollitt 1994, p.48). This gave NHS trusts the opportunity to employ cheaper, less skilled staff in their nursing and paramedical departments (which is very relevant to the recent development of MLSO's), and one which, as Harrison and Pollitt (1994, p.49) concluded, has given general managers substantially more control over these non-medical health staff.

These general management changes were implemented at a time of growth in the importance of British management in general. Trade union power and influence had been weakened by Conservative legislation. Textbooks and teachings from management 'gurus' emphasising culture changes, excellence and leadership became popular (Peters and Waterman 1982, Goldsmith and Clutterbuck 1984, Kanter 1984). Studies of the new NHS managers showed a perceived feeling of excitement and positive self-image among them. Management in the NHS was being based on philosophy and doctrine rather than hard scientific method, although the quantitative analysis of official statistics and data still had its place (Strong and Robinson 1988).

7.6.4. The 'Internal Market' System

Following the introduction of general managers into the NHS, was the requirement for a change of structure in order to support them. The concept of the 'internal market' system for health care had been derived from the work of Enthoven (1985a). This led to the proposals contained in the White Paper, 'Working for Patients' (DoH 1989), which introduced, and encouraged competition between NHS provider units and also between the NHS and private sector. The use of the term 'market' was avoided if at all possible, and was replaced with 'managed competition' (Ham 1989). Purchasers (buyers) and providers/commissioners (sellers) of health care were established, but the system had to run under strict constraints. Rules regarding borrowing money and making profits were laid out for public sector purchasers (NHS trusts), ensuring governmental control of the 'managed market' system. The 'internal market' system was expected to maintain and raise NHS standards by two mechanisms; 'market forces' - which should ensure that quality and efficiency are maximised because of the ability of purchasers to 'shop around' for better hospital services; and local District Health Authorities (DHA's) were being 'directed' within the system by central government

initiatives (Scheaff and Schofield 1990), and this was added to stronger local 'ownership' and accountability. Hospital X, collectively with another local hospital, achieved trust status in 1992 (Trust Y) and became a 'provider' of hospital services. At this point it had to compete with other trusts and private hospitals for contracts with 'providers' in order to bring in money to maintain itself. To this end, it entered into contracts with two main local health authorities and six fund-holding GP 'purchasers'.

8. THE CASE STUDY ON MLSO's

This section covers the case study on the group of MLSO's at Laboratory X and begins with a review of the observations on the main issues concerning this group over the last fifteen years. Then, following this the interview data is analysed, and the discussion highlights the main themes encountered in the study

8.1. Recent issues concerning the MLSO group: some observations

8.1.1 The Regrading of MLSO's in the NHS

The issue of MLSO regrading had a long history. Joint discussions had been initiated nationally in 1980 by the Professional and Technical Staffs B (PTB) Whitley Council, and again in 1983, however the two sides (staff and management) had not reached agreement. Subsequently, in the absence of any staff side proposals, the management side of the Council set up their own review to consider the need for changes to; the MLSO grade structure, the introduction of a support grade, and the arrangements for emergency duty cover. In developing their proposals, the management side had considered; the knowledge and experience from its members, information gained from visits to pathology laboratories and discussions with pathology managers, and the previously expressed views of the staff side.

Both sides had agreed that the existing grade structure (consisting of the basic, senior, chief and senior chief MLSO grades) was inappropriate for the levels of organisation and responsibility within modern pathology laboratories. The widespread introduction of new technology, coupled with significantly increased workloads had brought changes to the way in which pathology laboratories were organised. It was clear to both sides

that these changes had influenced the role and duties of MLSO's. This had been seen as having both role enhancement (re-skilling) and role diminishing (deskilling) aspects. Examples of this being that some MLSO's had taken on planning, implementation and developing duties for new pathology computer systems, whilst others had been carrying out routine duties for which no extensive training or qualification was required. The use of junior grades to perform basic support tasks had created difficulties in some laboratories (the management side proposals quoted that on average, less than fifty per cent of junior MLSO staff were actually training to become state registered, the rest they presumed, were working as cheap, support staff). The management side had also noted the restrictive nature of the existing grade structure, which offered little scope for the recognition of additional responsibilities and specialist skills. They therefore proposed a new grade and salary structure for MLSO's, including new grade guidance for qualified MLSO's, with a new grade structure for non-state registered grades, and a new MLSO training grade.

The proposed new grade structure for MLSO's consisted of four grades (MLSO 1,2,3, and 4) and a trainee grade linked to a single salary spine (Appendix C). Significantly the un-qualified support grades were now to be officially recognised and combined as medical laboratory assistants (MLA's), and given a separate pay spine. Grading guidance was provided for MLSO's in place of the existing definitions linked to numbers of staff supervised (see Appendix C). However, little guidance was given on the duties and tasks of MLA's other than carrying out 'under supervision by qualified staff, routine tasks in a laboratory which do not require the the skill and training of a state registered MLSO' (part 3111, in the 1989 changes to Whitley Council Handbook). The IMLS (supported by the Royal College of Pathologists) later issued prescribed

duties for MLA's, but it has become apparent that many NHS laboratories have reached a variety of inconsistent local agreements on what they think MLA's should or should not do.

It had been stipulated by the NHS Management Board that each separate health authority should decide, within the given framework and taking the work volume and complexity into account, the level at which MLSO regrading appointments should be made. The right of appeal against these regradings was initially in the hands of the local hospital managers. If no agreement could be reached at this level, then the appeal had to be taken to the District Health Authority Board, and from then onto the Regional Health Authority if necessary, under General Whitley Council conditions. The management side proposed that MLSO promotion should be based on merit and suitability, rather than on the qualifications held. Following this the proposals stated that "whilst passing the Fellowship examinations of the Institute of Medical Laboratory Sciences (IMLS) can be a valuable indicator which may be taken into account when assessing suitability for promotion, it is only one of a number of criteria. The IMLS qualification therefore does not form part of the proposed structure for qualified MLSO's" (PTB Management side proposals, April 1988). This was seen as an obvious set-back to the IMLS and the 'professional' aspects of the MLSO role.

The local flexibility aspect was continually stipulated in these proposals. It was suggested that a mechanism should exist which would enable local managers to recognise additional responsibilities and special skills and reward them (and thereby increase the local management control over MLSO grades). For this, a maximum of three additional salary points were to be made available at the top of each grade.

However, it was noted that the new grade structure did not provide for the reward of personal merit or individual performance. The management side of the Council also held the opinion, shared by managers in the service, that there were many tasks which had been previously performed by qualified MLSO's which could be performed by unqualified support staff. The consequences of which, argued the management side, were that "some MLSO's are not doing the work for which they have been trained, are not getting the opportunities for stimulating and challenging work, and are, understandably, frustrated" (PTB Management side proposals, April 1988). From this the management side proposed the introduction to Whitley of previous ad-hoc grades; laboratory aides (now to become Medical Laboratory Assistants), cytology screeners, phlebotomists, and anatomical pathology technicians (mortuary assistants).

A major concern from both staff and management sides was the existing provisions for 'out of hours' emergency duty working for MLSO's. Past proposals in this area had made no progress. The NHS management side at this time, did not wish to propose changes, but did however, suggest that discussions on this aspect should be considered in the future.

The national implementation of these proposals followed in the next two years, and Hospital X followed this process. However, local consultation and agreement with MLSO trade unions, the main one being the Manufacturing, Science and Finance union (MSF), were far from ideal or conclusive, with many failures to reach amicable agreements being reported. MSF, as the main representative body for the MLSO's, noted many concerns regarding the lack of satisfactory agreements and delays in the implementation of the proposed new grades. At the case study laboratory, many MLSO

grading appeals had been lodged with the District Health Authority. This however, gave an incentive for managers to work out local pre-appeal agreements, as they feared that a large number of appeals would cause embarrassment in front of their health authority members, who were at that time, also still carrying out many nursing grading appeals.

8.1.2. The introduction of Clinical Directorates

As noted earlier (p46-47), the Griffith's report (DHSS 1983a) had introduced significant changes to the NHS, the two most important for pathology laboratories were: general managers, and clinical budgeting (Dyson 1987). At this time, there existed three distinct staffing structures in pathology laboratories: one for pathologists, one for clinical scientists (Whitley Council Professional and Technical 'A' grades - PTA), and one for MLSO's (Whitley Council Professional and Technical 'B' grades - PTB). Pathologists, clinical scientists and MLSO's all work in specialised pathology departments (such as haematology or histopathology). The circular HSC(IS)16 had stipulated that the head of a department had to be a consultant pathologist or clinical scientist of equivalent grade. However at Laboratory X, the prescribed management responsibilities and accountability of each group were often unclear. Within the departments, the consultant pathologists work was clinically autonomous, and they directed the work of their junior medical staff. The medical management structure in Hospital X was still based upon the national 'cogwheel' division system; in which one of the departmental heads acted as the chairman of the division for a certain period of years, and represented their medical division (such as pathology or general surgery) on the hospital management board mainly in an advisory capacity. Accountability to hospital managers was almost non-existent.

An imprecise relationship between the clinical heads of departments and their technical counterparts (either principal or senior chief MLSO) had been observed at the case study laboratory, and had been reported nationally by Dyson (1987), who stated that it was "the relationship between the medical and MLSO structures that causes so many of the difficulties that have dogged pathology laboratory management in the past decade" (Dyson 1987, p.1626). These structures had evolved separately within the NHS and there had always been tensions present whether visible or hidden. Although there had always been a close relationship between pathologists and MLSO's due to their close evolution, their relative difference in status and prestige, was reflected in their positions held within the NHS management framework. In order to produce an efficient and reliable pathology service, these two groups had to be brought together in a coherent form. Some variation on management structure within pathology laboratories had existed for a while. Even within laboratory departments variation existed, with some senior chief MLSO's having much more responsibility than their colleagues, depending on the consultant head of departments' preference to be involved in management. In particular; noted at the case study site, certain pathologists (such as consultant haematologists) would have their own clinical responsibilities, which left them little time to spend on managing their departments, but gave more scope for their senior chief MLSO's to do so.

The introduction of resource management and clinical budgeting at Hospital X in the late 1980's, meant that doctors had to become more involved in managing their departments. The main structural approach used to achieve this was the clinical directorate model, originally pioneered at the John Hopkins Hospital, Baltimore, USA, in 1973, which consisted of a medical (clinical) director, supported by a nurse manager

and an administrator. In the British model, the administrator was replaced by a business manager (in line with the Griffith's general management model). This was to be the point that general managers saw an opportunity to increase their control over the two strongest groups in NHS laboratories, knowing that increased accountability would lead to increased control - see Harrison and Pollitt (1994). This could be achieved through the clinical directorate model, the aims of which have been summarised (Spurgeon 1993) as: an increase in accountability (strengthened lines of management, which gives power with accountability, and authority with responsibility); the decentralisation of management, so giving delegated responsibility and authority to the operational decision-making level, to ensure that service delivery and the resultant resource implications can be planned and audited at the local level; an improvement in clinical efficiency by placing the responsibility for costs in the hands of clinicians so that the cost-effectiveness of clinical service is central to them; a better focus for the management structure as it is based upon a medical service provided for a group of clients (service users) with less emphasis on professional hierarchies and more on service provision.

In the pathology laboratory at Hospital X, the clinical directorate consists of all the laboratory departments (except the public health laboratory departments), with the clinical director post being held by one of the consultant heads of department. This role is performed on a part-time basis, together with their other clinical and departmental duties. The role of clinical directors of pathology has been shown to differ between NHS hospitals and involves 'clinical leadership' and budgetary accountability to the hospital (unit) general manager (Dyson 1988). At Laboratory X, funding contracts which included an aspect of pathological testing had been arranged by the Trust Board

(60%) and also by the Pathology Directorate Board (40%) to give a total income for pathology of £1.5 million in 1993-94. Consultant heads of department are in turn financially accountable to their clinical director with each department holding a share of the total budget (depending upon staff numbers and running costs), but some senior chief MLSO's have had more budgetary responsibilities delegated to them than others. The role of the directorate business manager, who is employed full-time but often a short-term or rolling contract, is also variable. Significantly, at the case study laboratory (as at many NHS pathology laboratories) the business manager position has been filled by ex-principal MLSO's, whose previous post became extinct at the 1988 regrading process. However, these posts had been open to anybody with the relevant financial and NHS experience, including non-MLSO's.

Concerns regarding clinical directorates have been raised nationally. For example, the lack of clarity of the role of the clinical director has been highlighted (Fitzgerald and Sturt 1992). It has also been shown that many doctors feel confused and disillusioned about this lack of clarity, and also about the lack of support they receive (Willcocks 1995a). Spurgeon (1993) has noted that nurses and paramedical staff have expressed fears regarding increased medical domination via clinical directorate structures, however there is little evidence to suggest this has been reported by MLSO's. The evidence of this case study suggests that MLSO's are more worried about increased managerial control, rather than domination by the medical profession. The idea of maintaining corporate identity could be a problem for some successfully performing directorates (Spurgeon 1993, p.95), with staff members showing more loyalty to their directorate than the hospital (NHS unit), and this is linked to the lack of communication between pathology laboratories and hospital general managers. This was highlighted

nationally by the Audit Commission reports (see p.56, next section) and to some extent, in the case study.

8.1.3. The Audit Commission Reports

In 1990, the Audit Commission had been given the duty of ensuring efficiency and value-for-money by the Conservative government within public bodies, and had therefore assumed the responsibility for overseeing the external audit of the NHS, which involved: conducting regular audits, reviewing the value-for-money provided by the NHS, and performing annual studies of selected health service aspects. One of the first of these was the NHS pathology service, the pressures on which had been growing steadily for a number of years. There had been a significant increase in workload (number and type of tests and examinations performed). The Commission emphasised the 'key role' of pathology laboratories in the NHS, but stressed the significant cost (about 3% of the hospital and community services budget; 1/3 billion pounds in 1991), and was keen to ensure that pathology's significant resources should be used to maximum effect within the cash-limited NHS.

The Commission's first study involved visits to pathology laboratories in ten health authorities representing a cross-section of the NHS (north-south, teaching non-teaching, urban-rural) and discussions with representative professional bodies including; the Royal College of Pathologists, the Association of Clinical Pathologists, the Association of Clinical Biochemists, the British Society of Haematology, and the Institute of Medical Laboratory Sciences (now Biomedical Sciences). The report from this study (The Pathology Services: A Management Review, January 1991) concluded that the NHS pathology laboratory service was, facing major challenges, cash-limited,

having to respond to increased workloads, and the reforms of NHS and Community Care Act 1990 would take the service into 'unknown territory'. It noted that the 'internal market' reforms would provide the impetus for many NHS services to change, and that pathology in particular would be affected. The report highlighted five areas of concern; control of demand, control of resources, staffing, control of quality, and management structure. The managers of NHS laboratories were keen to respond, but it was the first, control of demand, which was the most difficult for many laboratories - their service was demand-led with some contractual services being funded (such as contracts with GP fundholders): if demand fell, so might the level of funding.

The report had stressed that demand for pathology investigations was a complex process involving the types of clinical specialities served, the numbers of clinicians, and differences in clinical practice, which had influenced the under and over-utilisation of laboratory resources. The report also supported the role of pathologists within NHS laboratories; "it is generally acceptable that pathologists should play a role in monitoring demand, advising clinicians on ways of using the service more effectively, either by curtailing inappropriate demand or increasing inadequate demand". Effective clinical feedback from pathologists had not taken place because the report found that effective information systems for monitoring demand had been lacking in most laboratories. An observation here is that some pathologists did not monitor or adjust demand because they did not want to interfere with their medical colleagues' clinical freedom (which demonstrates the strength of the medical socialization process). Workflow planning within pathology laboratories had been shown to be minimal. This had caused peaks and troughs in sample analysis and resulted in the inefficiency of

expensive analytical equipment (auto-analysers). Sample and report transport were shown to cause delays in result reporting.

The scope for improvement in the control of resources was significant. At that time there was no single budget within pathology, with capital and medical staff pay being controlled separately. Evidence gathered by the Commission suggested that there had been very different variations in productivity and cost-per-test between laboratories. Economies of scale were noted, as were opportunities for rationalisation and inter-laboratory cooperation which could significant improvements to productivity and efficiency. However overall emphasis had to be placed on quality issues. Pathology laboratories had been effective at monitoring analysis result quality, but an expansion to encompass demand management, speed of response, and result interpretation and presentation quality had to also be achieved. There had also been recruitment and retention problems, particularly in South East England. The MLSO Regrading initiative had given more scope for flexibility and it was down to local managers to use appropriate measures for their laboratories. NHS trusts were also now able to introduce their own pay and conditions.

Pathology management was also targeted by the report, which noted the lack clearly defined structures, responsibilities and lines of accountability (previously noted by Dyson 1987). This together with a lack of effective information technology had been a major concern for some time. The report suggested that pathology laboratories should produce a strategic plan, setting out current user requirements, arrangements to meet these needs and the resource implications involved. This supported the pathology

general managers at Laboratory X, who now had some leverage to use on their powerful medical colleagues.

A series of audits, initiated by the 1991 report, had been carried out on most of the health authorities in England and Wales by 1993. A second report "Critical Path: An Analysis of the Pathology Laboratory Services" (Audit Commission 1993), then described the emergent themes from this series. The main conclusion of this second report had been that 'communication and organisation need to be improved at three levels: between laboratories and their users, within laboratories, and between laboratories and general managers', and all three require better information through improved information technology systems. The report stated that "users of pathology services reported a high level of satisfaction with the accuracy of results and the technical standard of support provided..... but they were often less happy about communication links with laboratories" (Audit Commission 1993). The report recommended that sample transport systems should be controlled by pathology, and at a more strategic level, that demand for pathology services should be managed using improved information systems, so that pathologists and service users could be informed on their requesting patterns and agreed protocols could be established to improve efficiency. The response to this at the case study site was to review the management committee meetings system so that information was 'cascaded' down to all staff grades. Control over sample transport was influenced within Hospital X by the installation of a laboratory-controlled air tube system, which meant that blood samples could be sent directly to the laboratory from designated 'hot' sites (such as the intensive care unit and Casualty department) without the need to summon a porter. These measures did appear successful on both sides.

Conflict between general management and pathology laboratory managers was a point noted in the follow-up audits. It had been thought that this was due a lack of knowledge regarding pathology, and rising pathology costs set against constrained NHS budgets. General managers had been tightly controlling resources while laboratory managers had to face increasing demands for their services. The 1993 report recommended that the 'adversarial management' had to be replaced by a new, delegated authority. Laboratory managers had to demonstrate that they could manage resources effectively through clear lines of accountability and using good information systems. To address this, many laboratories had begun to utilise the clinical directorate model introduced into the NHS in the mid 1980's.

Another main theme of the Audit Commission's follow-up report was that of cost-control. It had shown that costing methodologies varied between laboratories, making cost comparisons very difficult. The Commission developed and put forward its own costing system which would give more comparable results between laboratories. From this it also recommended that; savings and reinvestment into pathology could be made, laboratory managers could review their current service provision and rationalise where possible (but closely observe staff morale), the best control of overheads, capital and consumable costs could be achieved, and this would lead to the most effective use of pathology's greatest asset, its staff. The Commission believed that by using the above approaches, it should have been possible to manage pathology services more effectively against tight financial constraints. It recommended that each laboratory had to work out its own "critical path" for service development; plan its intended changes and determine the action required for implementation. This again gave pathology general managers

some scope to develop their management skills and increase control over MLSO staff and to some extent, the pathologists (not many pathologists wished to participate in the financial management aspects of their work). Following these reports, the pathology managers from the case study laboratory, along with others nationally, were keen to demonstrate their response to their hospital general managers and created business plans and local strategic reviews. This led to much rhetoric but no real action, at the case study site action was deferred for two reasons: there was an impending change in business managers; and they were awaiting the national outcome of the Strategic Review of NHS Pathology Services which had been initiated in 1993 (EL(93) 69).

8.1.4. The Strategic Review of Pathology Services

The background for the Department of Health's Strategic Review had included a number of developments including: the introduction of the 'internal market' system into the NHS; the 1993 Audit Commission report, 'Critical Path'; the increased emphasis on clinical care away from hospitals and the need to consider the impact on pathology of this change in clinical practice; and the introduction and increased use of new technology.

The focus of the review had been to consider the key issues relating to the provision and commissioning of pathology services within the NHS. It did not address matters concerned with; academic or forensic laboratories, screening programmes, the National Blood Transfusion Service or Public Health Laboratory Service (PHLS), or issues related to specific departments or terms and conditions of service of laboratory staff. The review found that pathology services are "an integral part of clinical practice", and that its essential role is "to provide and interpret investigations for the diagnosis,

management, early detection and prevention of disease, through analysis of a specimen (blood, urine, tissue, etc.)". It found that these services are provided by over 380 NHS hospital sites in England and Wales. With additional clinical microbiological services being provided for the NHS under contract, by the 53 regional/area Public Health Laboratories (whilst also providing environmental health, food and water surveillance investigations). The report also confirmed the views expressed in the 1993 Audit Commission report (HMSO 1993) that NHS pathology was high quality service, with a major strength being that of its full clinical backup and advice. The achievement of fast turnaround times, by efficient transport systems and direct computer links were stressed as important quality issues. Emphasis was also placed on the quality perspective, in that attention was required on the service provision aspect, as well as result quality.

However, the report noted that 65% of responding trusts stated that they were considering changing their pathology service arrangements by; planned market testing, rationalisation, or co-operation with a near-by NHS Trust. Many trusts had also stated that they were reviewing the skill-mix ratios of technical and scientific staff, although they appreciated the need to have sufficient qualified staff to meet the demands of an extended opening hours/24 hour shift service (which had been increasingly demanded by the service users). However, some respondents had commented on the 'top heavy' mix, experienced due to low staff turnover and static senior grade staff. In conclusion the report stated that "the NHS has identified the need for change and is pressing ahead to develop appropriate local solutions. The major strategic issues of interest and concern were in improving service delivery, quality and staffing".

The Strategic review identified four main challenges to NHS pathology services, which were also directly relevant to the MLSO's in the case study (and nationally): the first was that the NHS 'internal market' reforms would affect pathology by the development of the purchasing function, the implementation of service contracting with the need to define and specify service requirements, quality standards and accurate costs; secondly, there would be an increased need for accurate costing systems, such as those given by the Audit Commission (HMSO 1993) or the NHS Executive Financial Development Unit (FDL (91) 127); in the third, the move of clinical care outside of hospitals meant that there was to be an increased emphasis on NHS Primary care, with earlier hospital discharge and day care. Also GP Fundholder's, as direct service commissioners, had an increased role to play in demanding appropriate pathology services for their patients (and had begun to stress the service quality aspects), greater co-operation with patient investigation and management would be required. The view at the time was that GP's would continue to purchase pathology services from local laboratories rather than attempt to provide their own (factors such as low volume/high unit cost equipment and lack of interpretive advice would account for this); and the fourth was that advances in technology would have an impact in three areas including; an increased use of information technology. At that time most NHS laboratories did not provide electronic on-line access to pathology results. Developments including remote pathology test ordering and protocol-driven test selection were envisaged nationally in the near future; there would be major developments in diagnostic technology, included those concerned with molecular biology (DNA and gene level analysis) and immunoassays (new single instruments had been developed which were robust and could perform many different assays normally associated with different pathology disciplines); and there would be developments in 'near-patient testing' (NPT), as many instrument manufacturers were

developing smaller, easy to use, desk-top analysers intended for GP surgeries. However, it was stipulated that these should follow the same stringent quality control guidelines of tests carried out in NHS pathology laboratories (Joint Working Group on Quality Assurance 1993, Association of Clinical Biochemists 1993).

The review concluded from this that the main consequences for pathology of new technology in the next five years would be an improved interaction between pathology service providers and their users, and a re-examination of the traditional technical boundaries between the pathology disciplines. This provided pathology managers at Laboratory X with evidence and support for their own plans to increase efficiency by rationalisation, changing skill mix (by the increased use of MLA's) and altering working practices (meaning the implementation of twenty-four hour shift systems). It followed (and this was observed at the case study laboratory), that MLSO's had now become very wary of the pathology general managers, who whilst employed under short-term contracts wanted to show their general management peers and bosses that they had introduced some efficiency saving scheme or 'improvements'.

One point not addressed by the review was that increasingly, technological advances had been blurring the boundaries between the various health 'professions'. At Hospital X, certain nurses are now performing simple medical procedures, such as the setting up of drips and the giving of drug injections (clinical nurse practitioners), and they are also being trained to perform analyses which had previously only been carried out by state registered laboratory scientists (such as blood gas analysis in Intensive Care Units). Local rhetoric suggests that this has been both a pressure and a challenge for MLSO's (see p110).

Other important areas of pathology were noted in the Review: there would be new models of service delivery, of which five examples were given which included models of collaborative NHS pathology laboratories, co-operation between NHS and private sector laboratories and rationalised pathology services; some issues concerned with service requirements and delivery were highlighted including the increasing trend in NHS trusts for market testing (the Government policy for which had been set out in 'Competing for Quality', DoH 1993), and recognition that pathology was one of the first clinical specialities considered for this, the need for professional advice and the key role of the consultant pathologist/clinical scientist had been strongly defended by the medical profession, and this had been recognised by the review. It stated that this role needed to be "reconsidered" (part 4.22, DoH 1995), but the quality of the pathology service "cannot be achieved without pathologists from each of the major specialities being on the staff of the appropriate provider units" (part 4.23), and that their role as clinical directors of pathology directorates needed "re-emphasising and consolidating" (part 4.23). However, as noted in part 4.26 (DoH 1995) "The objective must always be to ensure that the skills of the each staff groups in the service are fully utilised Organisational structures and staff roles should be determined by the needs of the constituent aspects of the service specification", and this had to be achieved by "a flexible approach to the consideration of alternatives". This gave the local managers at Hospital X some scope in developing new working practices and conditions and paved the way for the implementation of the current out-of hours CPP system (see p.71). There was a lot of rhetoric regarding this part of the report; it was thought that 'careful consideration of the alternatives' had been used so as not to offend the consultant pathologists. It had been known for some time that many private sector pathology

laboratories carried out their service without on-site pathologists. Certain service quality issues were noted: accreditation would offer potential benefits for both purchasers and providers. Purchasers were ensured of a high quality service, and providers were forced to examine all aspects of their service provision and rectify any deficiencies. The schemes noted were the National Measurement Accreditation Scheme (NAMAS), Good Laboratory Practice (GLP), British Standard 5750, Clinical Pathology Accreditation (CPA) and the King's Fund Organisational Audit scheme. Most NHS pathology laboratories (more than 600 in 1995) including Laboratory X, had achieved CPA accreditation; and external quality assurance (EQA) schemes were recommended as a way of comparing laboratory performance in certain assays and investigations with national performance. These were carried out in addition to internal quality assurance which is the laboratories own method of ensuring the quality of test results. (It should be noted that Laboratory X, like most NHS laboratories, had been participating in EQA schemes for many years). Clinical audit linked with clinical guidelines, would provide an important mechanism for demand control in pathology, and it was recommended that "clinical audit should be included in the contract specification with all providers whether NHS or private sector" (part 5.12). Despite this, the 'control over demand' issue has never really been addressed at Hospital X, the reason given by the pathology managers (general and clinical) being that: funding is linked to activity, a decrease in activity would lead to an undesirable decrease in funding, which in turn would lead to job losses.

A main concern of the Strategic Review was staffing issues. Staff in NHS pathology laboratories mainly consists of clinical pathologists, clinical scientists, medical laboratory scientific officers (MLSO's) and other laboratory support staff. It was noted

that "staff tend to be trained and remain in particular disciplines" and "Progression up the career structure is through the achievement of academic or professional qualifications" (part 6.1). The report had quoted staffing figures from September 1991 and 1992. Whilst the national figures of the relative number of MLSO's to consultant pathologists was considerable (1991: 13,040 MLSO's to 1,470 pathologists, 1992: 13,190 MLSO's to 1,474 pathologists - see Appendix B), the absolute figures remained quite stable within these two years, and those from the case study site reflected this (see earlier p.12). Interestingly, the most significant increase in numbers had been in the MLA grade (1991: 3,950 and 1992: 4,310) which showed an increase of 9.1% (see Appendix H). The review endorsed the view that 'local solutions' would emerge to shape the pattern of service development, provision and workforce, and that "differing models of service provision will produce differing staffing and grading profiles the balance between professional groups such as clinical pathologists and clinical scientists, clinical scientists and MLSO's, and MLSO's and MLA's are implicitly matters for local resolution." (part 6.4). It was stressed, however, that MLA's undertaking out-of-hours work should be supervised, but this was a matter for local discretion. At Laboratory X pathology managers have been looking at the possibility of MLA's assisting MLSO's working on an out-of-hours basis, and whilst supervision is required there has been no formal policy for this. As MLA's are sometimes viewed as 'cheap labour', some MLSO's feel that they are being replaced with less skilled staff and in the long term this will lead to a decrease in service quality (see later interview data p.98).

Following the Review, new patterns of service delivery were envisaged and which included; an increased emphasis on the clinical and purchasing role of pathology consultants would result in individuals working for more than one trust, cross-

disciplinary working would increase, to make more use of 'core skills' (broad-based Biomedical Science degrees had just been introduced). Also the workload requirements, and the skills and competencies of individual grades had been reviewed to increase effectiveness; there was increased pressure to provide a more comprehensive out-of-hours service with implications for extending the working day in pathology. This, coupled with pressures to utilise staff and capital equipment resources more efficiently, would mean that trusts may co-operate and 'share' staff and equipment (part 6.3). This in turn, would increase the requirement for laboratory staff to be more mobile in order to support satellite laboratories and near-patient testing (NPT) on wards and GP surgeries. This will be relevant for MLSO's at Laboratory X, which has agreed contract terms which another local trust to provide MLSO staff and management skills for its pathology laboratory. The impact of this form of rationalisation will become more prominent with time and will provide an interesting future development for the MLSO's at Laboratory X. Reference was also made in the Review, to the future impact of technological developments within pathology laboratories. Although it would be difficult to predict the impact in staff costs, it was thought that either savings in labour costs and/or improved volume and turn-around efficiencies could be achieved. The Review team envisaged that changes in skill-mix and grade-mix would follow the technological advances, and this is evidenced at Laboratory X where MLA's are being employed in increasing numbers to assist MLSO's with the running of large autoanalysers which perform many pathological investigations simultaneously.

In the summary of conclusions and recommendations, the Review noted that the main consequences of developments in technology over the next five years were likely to be improved interaction between pathology services and their users and a re-examination

of the traditional technical boundaries between the different pathology disciplines. It was also important that service developments should be matters for local decision. The Department of Health was to supplement the existing guidance on market testing with guidance specific to the pathology service, and should consider some form of collaborative working with a number of pilot sites which are reconfiguring their pathology services with a view to developing good practice guidance. The role of the consultant pathologist/clinical scientist within a diverse pattern of service delivery should also be re-examined according to 'individual circumstances'.

On the quality aspect, the report recommended that purchasers and providers incorporate accreditation or a commitment to obtain accreditation as a condition of any pathology contract, and also that purchasers should specify participation in EQA schemes in any pathology contract. Clinical audit should be included in the contract specification with all providers whether in the NHS or the independent sector. Any alteration to the patterns of service delivery would require an objective examination of staffing structures, and the components of those structures, in terms of grade and skill mix, or ensure that they match the nature and requirements of the available workload and hence "local solutions will emerge in relation to the nature and structure of the workforce". It was also noted as being important, that whatever future service delivery arrangements are pursued for pathology, continuing professional development for all staff is essential" (DoH 1995).

NHS pathology laboratories were under pressure from their trust managers and had to respond, not only to the above reports, but also the recently introduced and on-going 'internal market' reforms. As laid out in the Strategic Review, it was up to each NHS

site to reconfigure and develop its pathology service in the light of local requirements and workload. The national regrading of MLSO's had occurred in 1988-89 and this was to provide the basis for any local developments in staff structure. The next sections show how the managers at the case study laboratory responded to the above reports, the steps they took and what impact this has had on the MLSO's.

8.1.5. MLSO Emergency Duty Work - a change to shift work

From the early days of the NHS, the hospital pathology laboratory at the case study site, along with others nationally, had provided vital emergency cover for investigations required on an urgent basis throughout the day and night (24 hour cover). Initially the pathologists played a major part in providing advice and performing investigations for the 'out of hours' service, which consisted of one or two basic haematological (mainly blood transfusion requests) or biochemical investigations. For many pathologists in training, it was a valuable part of their education. However, they gained very little personal remuneration for this extra work, and with an increased demand for this service, soon began to dislike being 'on-call' all night, especially if they had been awakened two or three times whilst asleep. By Whitley Council agreement in the mid-1960's, the performance of emergency investigations was taken over by MLSO's, with pathologists being 'on hand' (contactable by telephone) to give advice and verify that tests were being performed appropriately.

The remuneration of MLSO's for emergency duty (on-call work) was governed by the Whitley Council Professional and Technical Staffs 'B' (PTB) regulations (see Levitt and Wall 1984, chapter 11 for the background to the Whitley Council). These, although being strict, were found to be open to varying interpretations which were often

conformed by the pathology staff performing the work. This meant that differing patterns and levels of remuneration occurred at different hospital sites which may have had similar workloads. Also the Whitley regulations were such that as the workload increased the separate 'calls' would overlap, and this would involve a lesser payment for performing the work. Claim sheets for emergency work were verified by the duty pathologist and/or the most senior MLSO of the laboratory. The hospital finance department had little to do with checking the emergency work claims (call sheets) other than verifying the amounts to be paid. There were different local 'interpretations' of the Whitley Council regulations and some laboratories with similar workloads, in the same area as Laboratory X had higher figures for 'calls per session'.

Another major aspect of this emergency work was its voluntary nature. It was not contractual. This meant that any state-registered MLSO (from any speciality) could volunteer for the on-call MLSO rota. The emergency work had always consisted of mainly haematological (including blood transfusion requests) and biochemical analyses, and in the larger busier hospitals a separate on-call rota for both specialities existed. There was little demand for 'out-of hours' investigations in the other specialities (histopathology, immunology and microbiology). This led to a certain amount of dichotomy: many MLSO's from the specialities of haematology and biochemistry would volunteer for on-call work following their state-registration, this provided a substantial means of additional income for highly trained and yet still relatively poorly paid NHS workers; however, MLSO's in the other specialities did not automatically have this option, requiring further training to be able to volunteer for on-call work in another laboratory department, and in some hospitals, they were excluded from this work. This was the situation found at Laboratory X by the early 1990's.

Throughout the 1970's and 1980's the workloads of pathology laboratories in general had increased rapidly. The reasons for this have been given as; improvements and developments in medical science, development of the diagnostic 'microchip' technology, simplification of technology (increased 'ease of use') - leading to improved accuracy and precision in diagnosis, increased use of information technology, and a general trend in laboratory medicine as developed and seen in the United States. At laboratory X, this dependence on high-tech medicine placed more and more demands on the pathology service to include: increased test repertoires, faster test turn-around times (by improved sample transport systems and computerised reporting) and to have more investigations available 'out of hours' (generally 'normal' hours being 9am to 5pm). This together, with an increasing requirement on hospital managers to reduce costs (as seen in annual cost saving exercises such as CIP's, and CRES's), and respond to the Audit Commission reports and NHS Strategic Review of Pathology, put pressure on the pathology laboratory to invoke change.

Many initiatives have been introduced at a local level. The first of these seen at Laboratory X, was a move away from the Whitley 'fee for call' system to a sessional payment for MLSO emergency duty. This entailed a fixed payment for on-call working: no matter how many 'calls' an MLSO had received to perform emergency investigations, the payment for that session would be the same. This arrangement was favoured by managers as it enabled better financial planning of the on-call budget and ensured that there could be no manipulation of the call claims. Observational data suggests that many MLSO's liked this system because they were ensured of reasonable remuneration, even if the workload was low. However, as with the original system,

local variations existed. The amount of remuneration per session (usually constructed from on-call workload analysis) was one main variable. Some MLSO on-call systems in the area were better policed than others: some systems had all calls for emergency investigations being directed through the covering pathologist with pertinent ones being relayed to the duty MLSO. Others would have all the calls going directly to the MLSO who could carry out a pathologist-set repertoire of tests, with the covering pathologist being available to provide guidance for requests made outside of this repertoire. The system at Laboratory X which first started out as being covered primarily by calls to the pathologist, reverted back to the MLSO-run system because of the 'inconvenience' to pathologists of telephone calls after midnight. Often, because of this lack of policing, the workload would rise: with junior doctors ordering tests on newly admitted patients to cover themselves for the following mornings consultants' ward round. This, together with the variations in investigation requesting patterns of doctors (embroiled in the term 'clinical freedom') conferred a lack of containment on the workload and hence the budgets of pathology laboratory. With no mechanism to make NHS doctors pay for their pathology tests, the workload had grown more or less unchecked (average 'on-call' samples per month in 1970 were in the region of 50 per department; this had grown to around 400 in 1990).

However, managers were determined to further to improve efficiency and contain costs, and various types of extended-working day or 24 hour shift systems for MLSO's were investigated. The pros and cons of shift working have been reported (Howl 1992), a local system in the case study laboratory has been introduced. This had been negotiated by management and trade unions (MSF) and with reputed benefits for both.

Nationally in the early 1990's, shiftwork had become a favoured model for out-of-hours cover in pathology, and had been seen by managers at Laboratory X as a major step in increasing the efficiency of pathology laboratories, whilst at same time improving the working conditions of MLSO's. Evidence for this was found in two documents produced by a former pathology business manager at Laboratory X, entitled 'Protecting the future of CLPS: All Change?' and 'Pathology Services: Collaboration or Competition?' (Barr 1995a & b). In the background to these papers, which set out proposals for a complete review of pathology services in the region, some hints to the motives and management views behind them are seen;

"There is a perception in the Treasury and the NHSE that following the two Audit Commission reports in 1991 and 1993, that it is Pathology's 'turn' to be scrutinised to ensure the service is being provided in an efficient, effective, customer focused manner that represents value for money There are major concerns regarding the organisation and management of Pathology Services, and as it represents a cost of well over a third of a billion pounds per annum, Purchasers and Providers require proof that the current models of service provision are appropriate and represent value for money in a climate of a cash limited NHS and the imposition of annual efficiency targets." (Barr 1995b, p.1)

This paper goes on further;

"Pathology is in need of a major review Change will occur irrespective of the recommendations of the Strategic Review to include the concept of Market Testing as a management tool to stimulate innovation and change." (1995:p.1)

"many hospitals in the region are reviewing their pathology departments, with or without the help of management consultants. There is interest at all levels, especially at Chief Executive and Purchaser level, in ensuring that further development of Pathology takes account of the wider environment in which the NHS operates." (1995:p.2)

The threat of the Private Sector was also mentioned;

“The growing strength of the Private Pathology sector, demonstrated by the recent successful take-over of the Lister Hospital in Stevenage by Unilabs and the success of Cleveland Laboratories in winning contracts from GP Fundholders, adds an extra element to the competition.” (1995:p.1)

These papers supported the views of the Chief Executive at Trust Y who was keen on market-testing - a point noted at several meetings with the pathology business manager; and so now pathology managers could press for further changes to the pathology service at Laboratory X involving MLSO terms and conditions. Further to this, a form of shift system has recently been introduced at Trust Y (termed 'Continual Pathology Processing' or CPP), consisting of a 24 hour, three session shift pattern, with MLSO's working a 37 hour week (which had often been over 60 hours per week with the previous on-call system) and receiving an annual salary supplement to remunerate for working in the system. This had a long pre-implementation history, with negotiations between the management and staff side (supported by MSF) taking place for around four years. It is also important to note that the pathology business manager had been instrumental in these negotiations. However, this position had been filled by different people on two occasions whilst the talks were proceeding and as each used somewhat differing management approaches, the implementation process was slow and hindered. A survey of MLSO's who took part in on-call duty work, and who are now going to participate in the CPP work, has revealed that the main intentions for doing so, are the financial reward and 'reduced-hours' aspects of the system (Wallbank 1996, unpublished data).

This system is only in place within the pathology departments of haematology (including blood transfusion) and biochemistry, which provide the bulk of urgent

investigations within pathology. The management view (Barr 1995 a & b) is that the expensive capital equipment of these departments is being manned and utilised constantly, with less non-use or 'down-time'. The system should also free-up any spare capacity of these departments, enabling more investigations brought in by income generation schemes to be carried out. However, in practical terms, implementation has not been straightforward. There have been problems with training in the two departments: historically intra-departmental work had become too compartmentalised (being divided into sections within departments), and with a lack of MLSO rotation to confer sufficient competency, this had highlighted deficiencies within departmental training policies. It was also noted that extra MLSO and MLA staff were required in both departments, to cover the CPP and the 'normal' hours work. These aspects have also been highlighted in the survey carried out by the author (1996). With the introduction of this Continued Pathology Processing (CPP) scheme at laboratory X in September 1996, the change to shiftwork has been confirmed, and it remains to be seen whether MLSO fears will be substantiated or not.

8.1.6 Staffing changes for MLSO's

The total number of NHS MLSO's in the case study laboratory had not changed significantly over the last ten years (59 in 1986, 63 in 1996), however, the introduction of medical laboratory assistants (MLA's) in 1989 has led to significant changes. This grade of staff has been used to replace MLSO trainee posts and vacant MLSO posts in some instances, often in an attempt to reduce staff budget costs or overspends, and leading to a considerable reduction in qualified MLSO's. In 1996 there were 12 laboratory-based MLA's employed at the case study site, and nationally MLA's have increased from 3,360 in 1989 to 4,660 in 1994 (see appendix B). MLSO numbers have

also changed recently. Since the early 1970's the total number of MLSO's in the NHS has risen steadily up to over 15,000 in 1988. However in 1989 there was a dramatic fall (over 13%) in the total number of MLSO's employed in the NHS (see appendix B).

Two significant events may provide the explanation for this (although neither of these are directly linked to the NHS commercialization reforms): the first being that the national regrading of MLSO's had taken place in 1989 (noted earlier), and this had caused a lot of dissatisfaction amongst MLSO's. The MLSO regrading exercise was initiated at the same time as the nurses were being regraded in the NHS, and there was a large number of appeals pending from this health profession. The regrading of medical laboratory scientists also generated a large number of appeals. The idea was to review all the MLSO jobs within NHS laboratories, and construct more precise job descriptions so that new grades could be assigned in line with the Department of Health's proposals. (DoH 1988). The appeals had cost the NHS a lot of time and effort, and as many were not resolved to the satisfaction of the individuals concerned, resentment grew. Some laboratory managers saw the regrading exercise as an opportunity in which to re-structure their laboratories in an effort to improve efficiency and save money. This had not been the primary intention of the exercise, which was aimed at the occupation as a whole rather than at individual laboratories. It is significant to note that although the pathologists had been involved in the process of regrading MLSO's, their own duties or roles were not scrutinised or reviewed in a similar manner. The result of this general dissatisfaction was that a large number of MLSO's left NHS employment, and many of these looked to well-advertised laboratory sales positions for alternative employment (this being the case of the laboratory sales manager utilised in the study).

Secondly, as already noted, MLA's were also introduced at this time, giving departmental managers an opportunity to replace vacant MLSO posts with cheaper staff whilst maintaining overall numbers. DoH data supports this concept; it can be seen that as MLSO numbers are falling, the numbers of MLA's are increasing at a similar rate (appendix B). However, in the NHS the duties of MLA's have been limited by IBMS-RCPATH guidelines, although there is evidence to suggest that these have not always been adhered to in some laboratories, including the case study laboratory (see later interview data). Local agreements may over-ride the national guidelines - it may be argued the increased use of un-qualified staff will affect the quality of the pathology service, however this situation is known to occur in private laboratories. The issue of skill mix had been addressed by the MAS report in 1987, which suggested that many tasks which had previously been carried out by highly skilled laboratory staff, could be undertaken by less skilled laboratory 'aides' under close supervision. This was the first formal reference to medical laboratory assistants (MLA's), who were then introduced into the NHS at the MLSO restructuring in 1989, and then into Laboratory X shortly after.

Comments regarding the employment of nurse support workers relevant to this aspect of MLSO's have been previously made; "The wrong approach would be for support workers to take on differing degrees of responsibility in different health districts. This would undermine a clear understanding of the essential role of the nurse, erode nursing roles and return the issue to one of pure labour market expediency." (Dyson 1989b, p.11). Dyson also noted that "The extension of the support worker's role is a direct response to labour shortages" (1989b, p.11) which is unlike the situation of MLSO's,

and he goes on, "it is vital that the debate about roles should be patient centred and based upon the quality of service", an element which may not always be included in the re-planning of MLSO posts.

Two significant points to note here are that: it has been noted in the interview data that there are differing views on the introduction of MLA's at the case study site, with likes and dislikes being shown (see later); however, it is pertinent to point out that although MLA's are not directly linked to the increased managerialism in the NHS, pathology general managers have been developing this aspect of MLSO work by supporting their introduction and replacement of some MLSO posts.

8.1.7 Skill changes for MLSO's

For MLSO's in the 1990's there is an increased requirement for computer/Information Technology skills, linked to devolved management duties, and an increasing requirement to analyse workload and efficiency costs. Together with the introduction of business managers into NHS pathology, the higher grade MLSO's (3 & 4) are now having more managerial duties devolved to them. In some NHS laboratories, including Laboratory X in the study, pathology management tasks are being devolved to lower MLSO grades (such as MLSO 2). This pressure to perform more management-orientated duties is also being felt by MLSO 3's in the NHS but to a lesser extent. The tasks which were previously carried out by these higher grades (training, supervision) are now being devolved to MLSO 2's and even basic grade MLSO's (MLS0 1) in some cases. Hence this is one area in which the impact of NHS managerialism is being felt.

An aspect of de-skilling and re-skilling was noted by observation has been confirmed by the MLSO interviewees at Laboratory X. There has been a general decrease in traditional manual skills (use of pipettes, microscopy, etc) with an increase in the use of computers and automated analysers, and also a trend towards multidisciplinary working (that is, combining the work and staff of two or more departments). This has also necessitated an increase in the skills required to use and maintain such equipment. More emphasis has been placed upon the practical aspects of physical and computer science. The manual dexterity once required to ensure the accurate use of a pipette, is now utilised in performing running-repairs to a laboratory automated analyser, or the mental ability previously required to utilise clinical information is now used to get the best out of computer software programmes. This concept marks a return to the 'technician' model of laboratory worker which was advocated in the 1960-70's, when such workers were trained in technical colleges and polytechnics and received certificates and diplomas from technician education councils (TEC's).

McLoughlin and Clark (1988) summarised the various effects of new technology on work tasks and skills and noted that these effects reduce or eliminate the complex tasks requiring manual skills, they also generate other forms of complex tasks requiring manual skills, problem-solving and interpretive abilities. Some tacit skills associated with the old technology are still required, but there is a fundamentally different relationship between user and technology, compared to the old mechanical technologies. Looking simplistically, technical change can have two main implications; skill and knowledge requirements may change as new technology is introduced, and jobs can be lost as information technology replaces them (Huczynski and Buchanan 1991). There appears to be some evidence of these effects from the MLSO's

interviewed in this study, and the direct replacement of MLSO's with MLA's may be taken as a form of job loss. Although there is no direct relationship of this to the NHS reforms and in all probability it would have occurred anyway, however this aspect of pathology staffing is being utilised by the pathology managers (introduced by the Griffith's reforms) to their own ends.

There has also been an increase in the number and use of automated or commercially-derived pathological test methods, which had previously involved the laborious preparation of various reagents and chemicals by each individual laboratory. These 'in-house' procedures involved a lot of time and a certain amount of skill; the intricate nature of some of these laboratory methodologies would mean that if the test procedure failed, it would result in a significant waste of time and effort. Therefore the 'penalty' for a lack of skills in some test methodologies would be an increase in inefficiency. With automated and commercial 'bought-in' methods, complex reagents and control materials are supplied in a ready-to-use form which represents a significant saving in time and effort for laboratory staff. However, the purchase cost of the commercial methods is often significantly higher than the 'in-house' method.

The advances in science and technology and the move to more automation and simple-to-use commercial kits the within pathology laboratory, have been followed by the introduction of kits for bedside or near-patient testing (NPT). This has led to concern being expressed by MLSO's (biomedical scientists) over the loss of control over tests which impinge on what they see as their 'territory' (such as tests involving the biochemical analysis of blood samples which are commonly performed in emergency or intensive care wards especially in the United States and increasingly so in Britain).

There had been some rhetoric amongst MLSO's at the case study site regarding the decrease in quality of pathological tests which are not performed by or directly supervised by MLSO's (see the later interview data), but there is no direct evidence to support this (quality assurance data from Laboratory X is inconclusive).

Significantly, the Audit Commission reports and NHS Strategic Review of Pathology, recommended that near-patient testing (and the associated autoanalysers) should always be performed under the supervision of a pathology laboratory, who should also be responsible for the training and correct maintenance of the equipment. In reality, patients have been performing their own laboratory tests (such as thumb-prick blood sugar levels in diabetes, or over-the-counter pregnancy tests) for a number of years. With the push for health care to move away from hospital-based secondary care to community-based primary care, and with further advances in medical technology, there will be further moves to introduce home or health centre based advanced analysis equipment. This will be a further challenge the role of MLSO's, who may have to move away from the hospital laboratory-based model. The shift of laboratory testing to nearer the patient has led to increased skills for other health care occupations including doctors, nurses and theatre technicians. However, it is important to note that in the USA, laboratory 'technologists' have also taken on expanded roles, and many clinical laboratory managers are not only responsible for the management of their primary speciality (pathology) but they also have management responsibilities for other services, such as radiology, physiotherapy, pharmacy and cardiology (Pomerantz and LoSciuto 1996).

With an increasing requirement for NHS MLSO's to adopt more computer-related (information technology, IT) skills, it is pertinent to examine the effect of this. Buchanan and Boddy (1983) have argued that computer technology may have one of two effects on the workers' role in an organisation. The first is concerned with replacing craft skills, and in which the computerisation creates a 'distanced' role for workers so that they have little understanding of the process they are working on, developed little skill and could not visualize the consequences of their actions. The second effect is that of a 'complimentary' role, in which the technology will add to the skill and knowledge of the worker and give rapid feedback so that monitoring and control of the process is made more interesting and challenging. Observational evidence from Laboratory X suggests that many MLSO's have adapted well to information technology, and most complaints are concerned with computer system failures rather than a deficiency in the required skills to use them.

In order to achieve the maximum benefit, changes in technology will require the appropriate management response. Walton and Susman (1987) suggested four main elements to this: the development of a highly skilled, flexible, coordinated and committed workforce; a lean, flat, flexible management structure; the ability to retain experienced staff; and a strong partnership between management and trade unions. They suggest that effective management strategies should include; job enrichment, multi-skilling, effective teamwork, knowledge-based reward systems, management devolvement of decision-making, improved selection and training programmes, and improved management training and development. This appears to be the management strategy at Hospital X. However, moves to introduce multi-skilling have been seen as

cost-cutting exercises by some of the MLSO's interviewed (see interview section) but this has not halted their implementation.

8.1.8. MLSO Terms and Conditions of Employment

At a national level, and following the employment of general managers on short-term, performance-related contracts, there has been a move to implement similar terms and conditions in other health care occupations (such as MLSO's). This has been strengthened by NHS trust status, which has given NHS hospitals more freedom to employ staff on local terms and conditions of service. This has meant that as qualified permanent laboratory workers have vacated positions within the laboratory, there has been a re-think as to how they should be replaced, if at all. As noted earlier, unskilled part-time workers (MLA's) have been introduced into many pathology laboratories in the NHS in an effort to improve efficiency whilst at the same time produce financial savings. Despite some views against the use of MLA's by MLSO's (biomedical scientists) at the case study laboratory (see interview data), the IBMS (their professional body) has produced guidelines to recommend the duties which they should or should not undertake (IBMS Guidelines 1994). The BMA has corroborated and supported these guidelines. Others (such as Dyson 1991) have supported the increased use of laboratory assistants (MLA's).

With the continued increase in managerialism and organisational, rather than professional/occupational control over employment within the NHS, more and more occupations such as MLSO's (biomedical scientists) may have their duties taken over by less-skilled, less-qualified workers (this has also been noted in nursing and radiography). These could be of a more generic type than has yet been seen. It is

possible to envisage workers being given training on courses run by individual health care organisations, such as NHS trusts, which would incorporate some form of 'cultural indoctrination' with the 'reinforcement of the organisation's values' as a prime function, rather than subscribing to a professional body. This approach is related to the human resource management 'cultural change' concept which has been adopted in other organisations. Although this is not a direct consequence of NHS managerialism, it is an aspect which will be developed by managers in an effort to influence increased control over NHS professions. This has occurred within the private sector (see later section), where employees have to be committed to providing the service which the 'customer' wants and is paying for, and where laboratory training is often tailored to the organisation.

8.1.9. Professional Aspects of MLSO role

A retrospective view of the national development of MLSO's and their claims to professionalism has been used to resolve the first research question. Medical laboratory workers were referred to as 'technicians' in the 1960-70's and their 'professional' body was the Institute of Medical Laboratory Technology (IMLT). This aim was to reflect the increasing importance of advances in medical technology. In the 1980's, in order to improve its own, and its members status, the 'professional' body changed its name to that of the Institute of Medical Laboratory Science (IMLS), and the term 'medical laboratory scientific officer' (MLSO, often shortened to medical laboratory scientist) was agreed by the IMLS and the Department of Health as the correct title for state-registered MLSO's working in the NHS. The title of 'profession' for MLSO's has been in use since 1960, when the Professions Supplementary to Medicine Act was passed. This has been reinforced at various stages, including the proclamation of a 'code of

professional' conduct by the IMLS in the late 1980's (Appendix A). Although it could be argued that the occupation of MLSO fulfils the majority of criteria for the 'trait' approach to professionalism, and that this could also be substantiated following the 'process' theory of professionalisation, it is reasonable to suggest that MLSO's will never achieve the prestige and status afforded to the established professions (medicine, law and the clergy).

This need to be associated with 'science', was arguably an attempt to upgrade the status and importance of the occupation, both in the view of other health professionals (especially medicine) and the general public. The IMLS has always maintained the importance of the role of medical laboratory workers in the provision of high quality health care. This has been acknowledged to a certain degree by the medical profession. However, there is little evidence to suggest that MLSO's publically have an increased status, and on the whole, the 'profession' is unknown to the general public. It may be seen as ironic that now there is an increasing utilisation of technology and applied science in an occupation which is attempting to move away from the 'technician' image (It should be noted that is a contrast to the situation in the USA, where the term for this form of worker is medical laboratory 'technologist'; where it would appear that technology has a higher standing than science). In a further attempt to assert its members' importance and in an effort to keep pace with advances in technology, in the 1990's the IMLS has been re-named the Institute of Biomedical Science (IBMS, and its members are now known as Biomedical Scientists). It could be argued that the occupation has, on the whole, always been more involved with technology than 'science' (that is, considering science in the pure form - associated with research and the advancement of knowledge; and technology as the application of science). There has

been some contribution to the development of medical laboratory technology by MLSO's in the NHS. However, the pursuit of research into scientific advances which improve the health of mankind has usually been the domain of the medical or academically qualified scientists.

The main aspects of a state-registered MLSO's 'professional' role as derived from the interviews with MLSO's at Laboratory X are: the responsibility for the quality assurance of pathology investigations and ensuring that precise and accurate results are given to the requesting clinical staff, which in turn will ensure that the pathology laboratory plays its part in maintaining effective clinical care; the responsibility for the training and supervision of the more junior laboratory workers (trainee MLSO's, MLA's, and trainee medical staff) in performing laboratory techniques and investigations. This includes ensuring the quality of test results, maintaining health and safety requirements (for infective and hazardous substances) and the general maintenance of laboratory analysers and equipment. Another point was the technical advisor aspect for the technical aspects of pathology work, both to the pathologists and the relevant clinical staff. It is important to note that this does not include the giving of clinical advice on diagnosis, or how to manage and treat patients, as stipulated by the PSM Act 1960 (although it has been indicated by one MLSO interviewee that the line between technical and clinical advice is not always distinct). To act 'professionally' and have 'professional' liaisons with other health workers (doctors, nurses, other MLSO's) and other related groups (sales representatives, laboratory analyser engineers) was also seen as part of the professional role of MLSO's.

8.1.10. Professional Body (IBMS)

A significant point in the case study is that the regional IBMS branch for hospital X and others in the area, is not well supported by the local MLSO IBMS members. This was indicated by the fact that many MLSO's at Laboratory X were lapsed members who showed little intention of renewing their subscriptions, and most viewed the Institute as being 'a waste of money'. When informed of this an IBMS spokesman suggested that "perhaps the people in question were not taking full advantage of the Institute's professional facilities and resources", and that "there is a lot interest and support for the Institute's CPD programme". It is not known whether this support is nationwide or is more prolific in specific areas (such as the south-east region). It has also been suggested nationally that the IBMS should have more of trade union aspect to it, which would give it more authority to contest terms and conditions of work for its members. The IBMS however, has always maintained its 'professional' education and development role rather than any form of political negotiator.

8.1.11. Changes to education and training

At Laboratory X, mirroring the national situation, MLSO education and training for many years, had consisted of on the job (in-house) training and a separate part-time college education, which comprised qualifications to the level of Ordinary National Certificate (ONC) and then Higher National Certificates (HNC) in medical laboratory sciences. These gave a grounding in all aspects of human biology (basic physiology, anatomy and cell biology) and applied science. It was certainly a thorough and useful education and one which could be applied to situations in the pathology laboratory workplace. Whilst there was some reference to scientific technology in the external college education there was however, very little training in this respect. This was at a

time of rapid technological advancement in medicine and society as a whole, and any technological training was often carried out in the laboratory workplace.

In the late 1970's to early 1980's, the employment position in NHS pathology laboratories such as the case study site, was very different to that of today (mid-1990's). Individuals at the case study laboratory would be taken on for employment on a laboratory-wide scale, that is, a number of people were taken on as trainees (referred to as Junior A or B MLSO's at that time) to fill a number of posts. These individuals would then spend a few months in each pathology speciality (multi-disciplinary training) before deciding which one they would like to train and work in. Each trainee laboratory worker would then apply to the Principal Medical Laboratory Scientific Officer (Principal MLSO) to work in the desired pathology department. Only rarely would an individual not be accepted to work in their preferred department. In fact it was the case, that individuals who had a change of mind and who wanted to move into another department were accommodated as far as possible.

This is a major contrast to the situation which has existed in the last ten years from the mid-1980's when very few trainee pathology laboratory workers have been taken on, and if they have it was to fill a specific position within a laboratory department. There had been very little if any, multi-disciplinary training since the mid-1980's. This position for qualified MLSO's, remains largely unchanged in the mid-1990's. However, this position is set to change again. With advances in science and technology, and an increased need to work more efficiently, managers in Laboratory X are looking to rationalise some departments. Those which are relatively well automated (such as the specialities of Biochemistry and Haematology) are suited to be combined into

'automated' or multi-disciplinary laboratories: the view is that the knowledge and expertise required to run and maintain the autoanalysers will be the same in both departments, so they should be combined and centralise this expertise into one department. This lessens the requirement for qualified 'experts', the duplication of expensive equipment will be minimised and greater efficiency savings will be achieved. However, the need for the education and training of MLSO's to become more generalised as the move to a multidisciplinary laboratory gains momentum may prove to be a stumbling block: most UK university degree MLSO courses are currently specialised. This aspect is another example of how general managers are developing and increasing control over some of the work of MLSO's.

Other changes have occurred to the professional training and education of MLSO's, which has switched to all-graduate entry within the last 5-10 years. Many MLSO's now follow courses leading to higher qualifications such as MSc, MBA or PhD, as opposed to the IBMS Fellowship 'Special Examinations' (professional body MSc equivalent) which were available until a few years ago at many universities in the UK. The move towards masters and doctorates level qualifications has followed from changes to the IBMS and CPSM requirements and may be viewed as an attempt by the professional body (IBMS) to upgrade itself and its members. The view at the study laboratory suggests there has been a perceived need to obtain 'academically recognised' scientific and management qualifications which would be of greater use in individual career development and progression into managerial careers. As noted previously, at the case study laboratory some MLSO's had thought that they were over-qualified for the job which they carried out. There were two views on this: - competition for more senior posts created a drive for higher qualifications; and the levels of knowledge set by the registration board (MLT Board of the CPSM) and professional body (IBMS) have been

too high. This may be attributed to moves by the professional body to promote the status of its members. Hannah (1996) suggests a more intrinsic motive and that as MLSO's (biomedical scientists) become more highly qualified they are demanding "more satisfying work" and "are involved in the development of new techniques and methodologies, and are publishing in respected scientific journals" (Hannah 1996, p.18).

It can be shown that MLSO's within both the NHS and private sector have incorporated more technical and computer skills into their education and training (a review of the IBMS Gazette over the last few years shows the development of many 'user-group' meetings, both locally and nationally, for some automated laboratory analysers). That the interpretation of laboratory test results should only be carried out by trained medical practitioners and not MLSO's (see IBMS/RCPATH/CPSM codes of professional conduct), has led some private sector managers (such as the one interviewed in this study) to question why such a great emphasis is placed upon the in-depth training in physiology and medical science for MLSO's (biomedical scientists) within the NHS. The private sector laboratory manager interviewed suggested that all MLSO's need is training to produce good quality laboratory results, and that interpretation of these results may then be left to the requesting clinicians.

8.1.12. MLSO Professional Relationships

From the earliest origins of medical laboratory (biomedical) science, the medically qualified pathologist has always been the head of the pathology laboratories nationally, and at Laboratory X. The earliest references to pathology laboratory 'assistants' found in text written by pathologists (Foster 1985), were as 'lab. boys' often employed out of the own pocket of their pathologist boss. The medical 'chiefs' of these laboratories would often take their laboratory assistants with them when they moved between

positions, which would reinforce the patriarchal relationship between them. However, MLSO's (particularly in the 1970's) have challenged this position which has created a certain amount of tension between the two groups (see earlier, and the papers by Dyson 1978 & 1987). The profession of medicine has played an important part in the development of MLSO's, whose progression was closely linked to the development and specialisation of pathological medicine. As specialities within medicine have been formed, so to have branches of biomedical science, so that a consultant pathologist with an interest in a certain speciality of pathology (such as haematology, biochemistry, histopathology or microbiology) would develop laboratory staff with skills and experience in the pathological tests which would support this interest. The pathologist involved would receive specialist referrals from general medical practitioners, both from the community and hospital. This would be followed by the development of the laboratory department which would grow in size and test repertoire. Further development would occur dependent upon the pathologists relative power and commitment (those in pathological laboratories which were linked to university medical schools developed their departments to a greater extent and at a faster rate, than those which were not).

From this, a certain amount of 'empire-building' by pathologists has been observed at the case study site and other NHS laboratories. Also, pathologists within university laboratories often undertook research projects which reinforced the importance of their department, bringing with it more funds and the opportunity for further development. The more entrepreneurial MLSO's seized the opportunity to establish a niche proclaiming the technical aspects of these university pathology laboratories, which in turn added to the esteem of the pathologist and laboratory. Following the introduction of general managers and the drive for increased efficiency within the NHS, coupled

with the resultant moves to rationalise pathology laboratories, amalgamate departments and employ less-skilled, cheaper laboratory staff, the pathologists within the NHS have felt under threat. This threat not only challenges their control over one aspect of health care service, but also their continued existence in the current form. This type of threat had previously only come from MLSO's (see Dyson 1977), but now their position is also being challenged by managers.

Another major point observed at Laboratory X, is that the comparative roles of pathologists and MLSO's (biomedical scientists) have been challenged at a professional level. Ashworth (1994) has reported the situation within his laboratory where senior MLSO's (biomedical scientists) have performed duties deemed to be only those which should be carried out by medically qualified pathologists; that is, there has been an increase in role overlap. He has also noted that 'preserving standards' was often meant only as a form of maintaining demarcation between the two groups and points to the extended roles of paramedics and some radiographers. The BMJ supposedly reported a number of protests to this paper (from pathologists), with only one letter of support. The argument was that 'good practice' had been indicated by the code of practice issued by the relevant professional body, in this case the Royal College of Pathologists, which did not allow for MLSO's (biomedical scientists) to undertake diagnostic work (1987, 1989). If this code had not been followed, it would then be extremely difficult to defend a case of mis-diagnosis in a court of law. It has not been reported or observed if this situation has occurred at Laboratory X, but as CPA accreditation is governed by the codes of practice issued by the Royal College of Pathologists, the IBMS and the CPSM, it has been difficult for laboratories which do not adhere to such codes to become accredited. As noted previously, due to such difficulties some private sector laboratories have

turned to other forms of accreditation (such as BS5750), which are less specific to pathology laboratories, and are more concerned with customer-orientated quality.

There are the four main occupational groups of staff working in the case study pathology laboratories at Hospital X; pathologists (medically qualified), clinical scientists (research based), medical laboratory scientists/MLSO's (scientific/applied technology), and the most recently added medical laboratory assistants (unqualified). Most NHS pathology laboratories employ these staff groups in varying mixes and numbers. The smooth running of the laboratory is dependent upon the way these groups work together. Relationships with the pathologists in the 1970's and 1980's have been good in some laboratory departments and very poor in others. Observational evidence suggests that this has largely depended on the personalities involved.

Pathologists are medically qualified and very rarely perform any routine laboratory benchwork (technical investigations). They undergo further specialised training leading to membership of their professional body, the Royal College of Pathologists (RCPATH) which equips them with the skills and judgement required to perform their clinical, diagnostic and advisory role. They maintain the professional values, class status and culture of consultants seen in other branches of medicine, which has been indoctrinated into members of the profession by selection and training (a form of 'socialisation'). Pathologists whilst wishing to maintain a good working relationship with other staff types in the laboratory, in particular medical laboratory scientists, remain on the whole, true to their medical background, including the values of not criticising the actions of another member of the profession (except in terms of gross medical misconduct) and maintaining a complex network of consultant contacts ('old boys network'). However,

there have been local examples of conflict between individual consultants, and their specialities including other pathologists or medical consultants.

Clinical scientists occupy a position 'between' MLSO's and pathologists, that is they have more clinical responsibility than medical laboratory scientists (having passed the membership examinations of the Royal College of Pathologists), however they are not formally qualified in medicine, originating from either doctorate research or medical laboratory science backgrounds. Clinical scientists are often employed in Biochemistry or Microbiology laboratories, but they can be found in any branch of pathology. In the case study laboratory, they are found in the departments of Microbiology, Immunology and Biochemistry, in the latter two they are heads of department. In some departments they take part in the routine 'benchwork' of the laboratory, in others they perform a purely clinical advisory role, so confusing the boundaries between pathologist and medical laboratory scientist.

Since the introduction of the clinical directorate system in within Trust Y (and hence Laboratory X) from the early 1990's, following the NHS resource management initiatives of the 1980's, the departmental head pathologists have been required to be more involved in the various management aspects of their departments, such as those concerning budgets, quality and personnel. Some of these have responded better than others. It has been observed that while some head consultants have been concerned about the financial aspects of their departments, they have been less than keen to deal with other issues, such as staff appraisal schemes. This is despite the fact that each consultant head of department is responsible to the clinical director; a consultant pathologist who has overall responsibility to the trust general manager (chief executive)

for the pathology budget, quality and personnel issues. This has led to the medical profession being more accountable to general managers in the NHS, at least in budgetary and quality terms. So while the clinical director has a certain loyalty to his departmental consultant colleagues, s/he is also accountable to the trust management board for their actions in fiscal terms, and therefore has to balance this conflict of interests. The consultants in each department within the directorate also must appreciate this balance of interests.

It is also evident that whilst the pathologists hold the positions of clinical director, and head of department (and budget holder), they will maintain a relative position of power and control over the 'subordinate' occupations within the directorate (that is, nurses in medical directorates or MLSO's in pathology directorates), and this has been a main consideration in their acceptance of this system (this has been inferred by some consultants at Laboratory X). There have been long standing conflicts between pathologists and medical laboratory scientists (MLSO's), as to who should be 'in charge' in pathology laboratories (Dyson 1978, 1987), although there has been no apparent evidence of this at Laboratory X. However, the Audit Commission reports (1991, 1993) and the Department of Health's Strategic Review (1995) have supported the pathologists in this matter. This is an important point for the pathologists. It has been known for a while that private sector laboratories provide an 'analytical-only' service. This means that MLSO's perform pathology tests and relay the results directly to the medical staff concerned without any clinical interpretive assessment by the pathologist. In many private laboratories pathologists are often indirectly employed (seconded from NHS laboratories), or employed on a part-time basis (often by a 'contact by telephone when required' system). Therefore, if NHS pathology laboratories

were to follow the private sector model there would be a decreased requirement to employ pathologists in the numbers that exist now. If the former reports had not supported the current 'head of department' role for pathologists, it could have led to the demise of NHS pathologists, at least in their present form.

Another cause for concern for pathologists has been observed at Laboratory X, that of multidisciplinary departments in NHS pathology laboratories. This has become more important in recent times as more laboratories are looking to rationalise their systems of work in order to improve efficiency in line with Government policy. This will lead to conflicts of interest between pathologists: which pathologists should manage the multidisciplinary laboratory; and hence will the same number be required as now. With increased automation and easier to interpret laboratory results will there be a reduced requirement for pathologists to be employed in their current form in the NHS. This role could be carried out by other existing health care occupations with an extended role (such as medical laboratory scientists in the laboratory, or clinicians on the hospital ward). It has been noted in local discussions with pathologists that this has been the main point of concern they have in relation to the market testing of NHS pathology laboratories (they are worried that they may become 'surplus to requirements'). These pathologists are convinced that if an NHS laboratory was 'taken over' by a private sector company, there would be a rationalisation of the skill-mix which would target their profession. The rationalisation of pathologists is another area which has not yet been fully explored within the NHS.

8.2. INTERVIEW ANALYSIS AND DISCUSSION

The interview data has been analysed according to the sections given in the interview schedule (see methodology section, p.20). The topics given below follow the responses to the guide questions asked in each interview section, which have then been reported and discussed.

8.2.1. Details of the interviewees ('Key Informants')

The NHS interviewees consisted of MLSO's from all NHS grades and disciplines of pathology. These included two Senior Chief MLSO's (Grade 4), one from the Haematology department and the other from Immunology, both of whom had been employed at the case study laboratory for over twenty years but had previously trained at other NHS hospitals. The Haematology based MLSO 4 had come up through the grades from school, whereas the Immunology MLSO 4 had entered pathology laboratories after completing a degree in immunology at university. The Chief grade MLSO 3 had also worked in the Biochemistry department at Laboratory X for over twenty years, but had trained at a nearby NHS hospital. The two Senior grade MLSO's (grade 2) had come from different backgrounds but had followed similar career paths via local colleges and both had only worked at the case study laboratory. The basic grade MLSO's (grade 1) had both been employed at the laboratory X for sixteen years but the Biochemistry-based woman had a career break of three years to bring up children. The man employed in Histopathology was shortly due to leave laboratory X for a senior position in an NHS hospital laboratory in the south of England. The NHS Pathology Business Manager had previously been employed in the Microbiology laboratory at Hospital X. He worked in a number of pathology departments within the case study laboratory and had achieved the position of MLSO 3 before entering the

general management system. The Pathology Equipment Sales Manager had worked at Laboratory X for over ten years from college. He had then left to pursue a career in pathology equipment sales over the last six years. The private sector Pathology Manager had also trained and worked in Laboratory X and had then left to pursue a managerial career in a large national, private pathology company.

8.2.2. MLSO tasks, duties and responsibilities

In this section, the duties, tasks and responsibilities, given by the MLSO's at interview have been categorized. This is consistent with the basic description of MLSO work and duties given in the background to the study. It can be seen that the duties and responsibilities of these MLSO's changed with grade, with the lower grades (MLSO 1) performing basic tasks (setting up analysers, performing various analyses, microscopy), while the higher, more experienced grades (MLSO 2 and 3) have more supervisory or teaching roles. The highest grade (MLSO 4) now appears to be basically a management grade, although they have overall technical charge of the department

The types of duties and responsibilities given by the MLSO's were:

i. MLSO staffing and supervision duties, were evidenced by a number of views;

“as a state registered MLSO, I can work unsupervised I can also supervise MLA's (assistants)..... I am accountable for my technical work through a line of senior MLSO's, up to the Senior Chief MLSO (MLSO 4), but overall I am accountable to the Top Grade Biochemist I can show MLA's what to do but senior's (MLSO 2 grade) do most of the training” (MLSO 1 Biochemistry Department, Laboratory X)

“ The other MLSO 1's and me do the routine work, making up stains, checking and maintenance and so on, we only supervise the MLA's I am responsible to the consultant pathologist and chief MLSO for my work” (MLSO 1, Histopathology Department, Laboratory X)

“I work unsupervised most of the time Pathologists are there to give you advice and supervise but most of the time they are not there they are in clinics or at post mortems when I am ‘on-call’ I am completely unsupervised usually the seniors train basic grades and supervise them, we also have to keep an eye on MLA’s responsibility comes with the job, I have to be accountable to my peers and the head of the department” (MLSO 2, Haematology Department, Laboratory X)

“Supervision of MLSO 1’s and MLA’s is an important part of the MLSO 2 jobI enjoy it I like to solve problems for people” (MLSO 2, Biochemistry Department, Laboratory X)

“I manage over a dozen staff of all grades, MLSO’s and MLA’s I have to supervise and train, it’s all part of the job, but we do delegate to the MLSO 2’s we have to look at some management tasks in some labs MLSO 3’s are in charge of the technical running of the lab. the Pathologists used to teach us many years ago but now we train each other they don’t really supervise our work but they are there to provide clinical advice when required” (MLSO 3 Biochemistry Department, Laboratory X)

“I am in overall technical charge of the Haematology department and so I suppose I supervise everybody, except the pathologists of course (laugh) but now I have to delegate a lot of day to day supervision to the MLSO 2’s and 3’s I have more financial tasks to do, and together with the consultant pathologist I am responsible for the day to day management of this department” (MLSO 4, Haematology Department, Laboratory X)

ii. Actual MLSO work duties were described as being quite technical in nature, however, these varied between departments, with some involving more automated analysers than others. The scientific aspects of each department have been given in the background to the study. A number of views on this included;

“If friends ask me what I do and I say that I work in a pathology laboratory, they always say ‘do you cut up dead bodies then?’, to which I reply, no only bits of them! (laugh) We do a lot of preparatory work for the Consultant Pathologists, but we also do a lot of scientific development work on new methods ourselves a lot of the work is ‘hands on’ and quite skillful we can do some ‘cut up’ but there is a big national debate going on with pathologists about this which involves the Royal College of Pathologists and the BMA I think but legally the final diagnostic work has to be left to the pathologists, except the cytology screening work” (MLSO 1 Histology Department, Laboratory X)

“we operate the autoanalysers, loading them doesn’t take any skill, but if they go wrong you have to know what to do service call-out visits are expensive, but most of the time we have a good idea of what’s wrong and can fix them ourselves” (MLSO 1 Biochemistry Department, Laboratory X)

“Quality control is very important in pathology laboratories and MLSO work if you have an abnormal result and you take it to the pathologist they will ask if the ‘control’ for that test or analyser worked okay these results are logged and checked and can be referred back to senior MLSO’s have to keep a check on the quality control for the tests in their departments” (MLSO 2, Haematology Department, Laboratory X)

“MLSO work involves performing many pathological tests on various samples, in this department it is mainly blood samples it is not just about doing the tests you have to know what the results mean, quality control or assurance is an important aspect of the work..... I also co-ordinate the department fill in invoices, leave forms etc. there is a big management part to it” (MLSO 4, Haematology Department, Laboratory X)

8.2.3. Professional aspects of MLSO work

When asked about their professional aspects of their work, the interviewees responses could be included in the following categories;

i. 'being professional' to most of the MLSO's interviewed (n = 5) was concerned with acting in a 'professional' manner. This was found to be difficult to describe, but apparently meant abiding by the CPSM and IBMS codes of conduct, and dealing with fellow health professionals in a respectful manner. The professional association (IBMS) also referred to its official code of conduct (see Appendix A), and the information given in its promotional literature as an indication of to the MLSO (biomedical scientist) role.

A typical response given was:

“I am state registered with the CPSM if I do anything wrong, that is against the CPSM or IBMS code of conduct then I can be struck off, which means I wouldn’t be able to work in the NHS again” (MLSO 1, Histopathology Department, Laboratory X)

ii. Quality assurance of the pathology investigations was noted as being very important because, as one MLSO stated;

“the main thing that MLSO’s do, or should do, is make sure that the correct results are obtained and reported, they assist pathologists in this and this is what the work of the path. lab. is all about all grades of MLSO should be responsible for quality, not just seniors” (MLSO 2 Haematology, Laboratory X)

And another MLSO said that;

“you have to produce high quality results, that means that the doctors can give high quality patient care, you can’t expect to give good care if your laboratory results are rubbish that’s why we have internal and external quality schemes to make sure that are results are accurate and compare to other labs. I am responsible for the results that I produce, as a state-registered MLSO you are trained to work alone, responsibly” (MLSO 1 Biochemistry Department, Laboratory X)

Related to this, laboratory accreditation (CPA), a national quality standard for pathology laboratories, was highlighted by two interviewees as being significant, and it was considered to have had a major impact by the laboratory manager and chief biomedical scientists (MLSO 3 & 4) at laboratory X. However, lower grade laboratory workers, who were less involved in updating the documentation and preparing for accreditation inspections, were less convinced about its importance. As one basic grade MLSO said;

"it seems like a lot of hard work for nothing to me you can work hard for the two weeks before the CPA visit, and then it’s forgotten until the next inspection." (MLSO 1 Histopathology, hospital X)

iii. The teaching, training and supervisory duties of more junior laboratory staff, laboratory assistants (MLA’s) and trainee medical staff was considered as part of the MLSO role and was given as;

“very important, it is part of your professional duty to train other MLSO’s and pass on your knowledge, that is what ‘professional’ means to me. I have trained some medical students over the years and some of them don’t know what quality control is (laugh) you wonder what they do on the wards!. I have heard stories of nurses using laboratory equipment and you wonder how on earth they get the right results I don’t think they do sometimes” (MLSO 4 Immunology Department, Laboratory X)

“as a senior MLSO (grade 2) I am supervise the basic grades and MLA’s, I also train junior doctors in how to use pathology analysers we don’t usually let MLSO 1’s do this” (MLSO 2, Haematology Department, Laboratory X)

iv. The ability to give technical advice regarding pathological investigations was seen as an important duty for MLSO’s;

“most of the time it is MLSO’s who are available to give advice, that is technical advice, we can’t really give clinical advice although some chief MLSO’s know nearly as much as the consultant pathologists we know what tests should be done, what affects the results, and the significance of the results, which is where the overlap with pathologists occurs some (pathologists) get defensive about it others don’t bother as much, it’s probably down to personalities” (MLSO 1 Biochemistry Department, Laboratory X)

“MLSO’s can give technical advice, i.e. comment on the quality of results and even recommend further tests, however they cannot make or suggest a diagnosis that is legally the job of pathologists” (MLSO 4, Immunology Department, Laboratory X)

v. Professional relationships: Reviewing the history and development of MLSO's shows a symbiotic, yet patriarchal relationship with pathologists. This was evident from the interviews. As the laboratory equipment sales manager, who worked as an MLSO in the NHS laboratory X in the 1970-80’s, noted:

"It was definitely an 'us and them' situation. They tended to think that they were God Almighty, and we (MLSO's) were there just to do their beck and call" (Pathology Sales Manager, Laboratory Equipment, ex-MLSO Laboratory X)

This view was also endorsed by other MLSO’s in current practice;

“ but we were really the handmaidens of the Pathologists in those days and we still are to some extent some pathologists are better than others the clinical scientists in Biochemistry aren't too bad but they are on more of a level with us” (MLSO 3 Biochemistry Department, Laboratory X)

However, relationships with other health workers appeared good;

“I know a lot of other people in the hospital, doctors, nurses, pharmacists, managers, electricians, all the people you come across on a day to day basis, some of them I know socially out of work. Over the years you build up relationships with certain people and then if they have a problem with something to do with the lab. they will come and ask you about it. When you help them you feel good.” (MLSO 3 Biochemistry Department, Laboratory X)

“I generally get on well with doctors and nurses, you do get the odd ‘stropky’ one though the porters are usually friendly to lab. staff” (MLSO 1, Biochemistry Department, Laboratory X)

8.2.4. Recent Changes in MLSO work duties: the impact of NHS reforms

This section looks at areas where the main changes to MLSO work and conditions have occurred. It also shows how the MLSO's in the study group have perceived that the NHS reforms have had the most impact on their work. In order to address the second research question, these have been divided into 'employee' and 'professional' related categories, however because of the complex nature of the subject, some overlap does occur.

As regards the changes in 'employee' duties of the MLSO's a number of aspects were felt to be significant;

- i. one of the main areas highlighted was an increase in 'managerialism', with changes to the pathology management structure and accountability;

"I would say that accountability has changed over the recent years, we used to be more accountable to Principal MLSO's for budgets, etc. but now we have a business manager and clinical director who keep a close eye on what we do the trouble is the people in these positions keep changing!" (MLSO 4 Immunology Department, Laboratory X)

"MLSO's used to be replaced by MLSO's, and sometimes trainees, but now often if an MLSO leaves you know that they will be replaced by a laboratory assistant (MLA) I know that laboratory automation has made things easier, but MLAs have to be supervised by someone trained staff" (MLSO 3 Biochemistry, Laboratory X)

"the clinical directorates have made a difference, now we are accountable to general managers as well as the pathologists I think that is one of the main issues of the NHS reforms" (MLSO 1, Histopathology Department, Laboratory X)

MLAs are a relatively recently introduced grade of laboratory staff (first appeared formally in 1989), and at the case study laboratory, they have had a mixed reception. The pathology manager in the study heralded them as a vital part of modern pathology laboratories;

"no pathology laboratory should be without MLAs I see them being increasingly utilised in a number of flexible roles" (Pathology Business Manager, Laboratory X.)

However, one MLSO interviewed warned that;

"they (MLAs) do have a role to play in pathology laboratories which will give us (MLSOs) more freedom to carry out other responsibilities, but their duties should be limited, and they (MLAs) should not be allowed to perform laboratory testing, which I know to be the case in some NHS and private laboratories" (MLSO 1 Biochemistry, Laboratory X)

The IBMS and Royal College of Pathologists have agreed guidelines for MLA duties (IBMS 1990). However, increasing numbers of NHS laboratories, are allowing MLA's to perform simple laboratory tests whilst being 'supervised' by state-registered MLSO's. This, according to a chief MLSO (grade 3);

"allows greater flexibility..... gives the MLA's more job satisfaction, and MLSO's more time to perform more complex work or the devolved management duties which seem to be the norm these days!" (MLSO 3 Biochemistry Department, Laboratory X)

Another aspect of this NHS managerialism that has had a profound impact on the MLSO's at the case study site is that whilst pathology managers have been employed on short-term, rolling contracts, this so far has been resisted by MLSO's. However, this is now being introduced for MLSO's who are employed for some shift patterns, and who have to undertake specific hours and times of duty. A major effect of the short-term management contracts has been noted in the case study laboratory where;

"the root cause of the unsettlement and constant change in pathology stems from short-term management contracts,"

has been suggested by an MLSO 4 interviewed, who continued;

"all managers want to do is get 'notches on their sticks' (that is, points on their c.v.'s) before they move on to another position it doesn't look good if they have not produced any changes" (MLSO 4 Haematology, hospital X)

This, the interviewee explained further;

"was occurring against a relatively stable background of basic level MLSO staff, who then have to cope with the constantly changing environment".

At Laboratory X, there have been three different pathology business managers in the last five years; all having their own views and each attempting to get more 'notches on their sticks'. This appears to have worked, as the two managers who have left, moved on to higher level NHS management positions, and all have attempted to enforce (to a greater or lesser extent) some change to MLSO 'out of hours' work.

ii. The second major area of impact on MLSO work was concerned with the 'deskilling' and 'reskilling';

"MLSO work is changing we now have less scientific skills than before, the technical aspects are being emphasised we also have to have computer skills",

But this view on further prompting also showed a paradox;

"I mean there is less science involved and more technical skills such as analyser maintenance, trouble shooting and fixing I suppose we never really did much science in the true, pure sense i.e. research science, but the old equipment looked more scientific (laugh) it's always been applied, but now it seems a lot more technical, even though the Institute (IBMS) is trying to move away from us all being called 'technicians'!" (MLSO 4 Immunology Department Laboratory X)

This deskilling theme was a common among the MLSO's interviewed, and was particularly significant to those working in the highly automated departments of haematology and biochemistry. However, it was found to be a common theme underlying every department of pathology. One MLSO also mentioned the loss of 'the art' of the job, referring to this as the;

"manual skills which you either have, or you learn by years of professional training" (MLSO 3 Biochemistry department, Laboratory X)

It is understood that this concept of 'the art' of the job included: such subjective skills as those used by cytology screeners involving the microscopical examination of pathological samples to screen for abnormality (such as performed by biomedical scientists working in haematology, histopathology and microbiology laboratories); those skills involved in the reporting of test results which involve a subtle change or an uneasy to distinguish result, which will have been acquired through years of experience; skills involving the use of certain items of laboratory equipment, such as pipettes, flasks and slides; the analysis and reporting of cell agglutination results in blood transfusion or serology work; and a number of other skills deemed to be of a similar nature. This 'reskilling' aspect has also affected the higher grade MLSO's, who also appear to have different duties than they did a few years ago and this is related to the increased managerialism noted previously. As one MLSO 4 stated;

"I spend a lot more time these days on management tasks and administration passing invoices around keeping IPS data up to date checking and certifying orders, and monitoring travel claims" (MLSO 4, Immunology Department, Laboratory X)

This can be seen as a source of tension and role conflict, because more time is being spent on the less liked tasks, as the MLSO 4 continued;

"I spend least time on things that need it. (laugh). The thing I spend least time on that I should spend most time on is training I would say one of the duties I prefer most is scientific training training is very poor in my department I would like to spend less time on passing invoices, going to management and committee meetings".

This view was verified by the Pathology Equipment Manager who stated that;

“the Chief’s and Senior Chief’s, they tend to be more desk orientated rather than bench orientated, and I know a lot don’t like that approach, they’ve actually voiced that criticism”

iii. A major concern of the NHS MLSO’s interviewed, involved recent changes to their terms and conditions of employment, particularly the ‘out-of-hours’ aspect of their work;

“We used to work the usual 9 to 5 type job, but out-of-hours work was always covered by the on-call system, so that one person (MLSO) was always around to perform any urgent tests for casualty or intensive care this system was good because we were paid extra money for this voluntary duty the extra money was a very good rate and meant that our poor basic wage was supplemented. There was no problem with sickness because there was always somebody who would cover for the extra money. But then the managers (clinical director and business manager) decided it would be a good idea to change the system and we could work shifts like some other bigger labs. but they wouldn’t be working on these shifts!” (MLSO 1 Biochemistry Department, Laboratory X)

Another MLSO stated that;

“terms and conditions were controlled by the Whitley Council regulations for Professional and Technical Staffs, PTB. This meant that nationally all MLSO’s had the same terms and conditions. This doesn’t happen now, some MLSO’s are being employed for shift work on tailor-made contracts, I think some even have fixed salaries I don’t know if the union (MSF) have looked properly at these” (MLSO 4 Immunology Department, Laboratory X)

Many MLSO's have been sceptical and have apparently viewed shiftwork as a management cost-saving exercise. The MLSO's who had performed a lot of the previous on-call work have become worried about their major loss of income. As one MLSO stated;

"having more time at home is fine, but it doesn't pay the bills! the shift supplement is a lot less than I could make on the on-call rota" (MLSO 1, Biochemistry Department, Laboratory X)

However, there was a different view from an MLSO from a department which does not have any 'out-of-hours' work;

"the conditions in my department haven't really changed I haven't noticed anyway. There are more cost saving things going on but we still work 9 to 5 as before"

This interviewee went on;

"there is more a management presence now (prompted) .. I suppose I mean that the clinical director and business manager are always around. They don't look over your shoulder but they do take an interest, which is good. Mind you the clinical director is also the head of my department, so he is bound to be here!" (MLSO 1 Histology Department, Laboratory X)

In describing changes to the professional aspects and role of MLSO work, the following were highlighted by the interviewees;

i. Professional body (IBMS) membership prompted a number of differing views;

"the Institute (IBMS) is a waste of time and money! It always has been since I have been in it. They don't do anything for you, most people I know get their Gazette and only look at the jobs page" (MLSO 1 Biochemistry Department, Laboratory X)

This MLSO also stated that;

"not many people I know go to Institute meetings in this area no I can't think of any, but some go to the National Congress. Mind you, I think they only go for the trade fair to get lots of free mugs and things" (MLSO 1, Biochemistry Department, Laboratory X)

The Pathology Equipment Sales Manager (an ex-MLSO) had also been disillusioned with the MLSO professional body whilst he worked in the NHS, and had talked about this to current MLSO's. His view was clear;

"I don't think the med-lab. scientists have actually gained over the years anymore esteem than I originally had when I was there. I think they have lost some ground

if anything I was very disillusioned with the Institute (IBMS) and its lack of effort I felt that the Institute hadn't really helped its members. It was abit aloof, it wasn't really looking at the grass roots issues. Many Institute meetings you went to were a farce, alot of the things that you read about in the Institute Gazette you thought, well what's that got to do with the real thing of what we are doing here, and I still think that now although I am not a member anymore I don't really have much contact with it now, I could be grossly incorrect now”

ii. The education and training of MLSO's and continued professional development (CPD), was mentioned and criticized;

“we are over qualified for what we do you only need your Fellowship (professional qualification - Masters equivalent) if you are applying for a senior post. The job is becoming more technical and automated, it's more applied science than before” (MLSO 3, Biochemistry, Laboratory X)

However, other interviewees supported the IBMS and stated that recent developments were for the better;

“all MLSO's should be in the Institute (IBMS), the CPD system (professional development) is very good, you cannot expect to keep up to date with developments in your field if you do not do something like that” (MLSO 2 Haematology Department, Laboratory X)

“there have been good and bad points in the IMLS (now IBMS), I'm not sure if the status of MLSO's has increased over the last ten years,..... I don't thin it has, perhaps they could have fought our corner pay and conditions wise but they didn't and gave their reasons the CPD scheme seems to be good from what I have seen and been told” (Pathology Business Manager, Ex-MLSO, Laboratory X)

This aspect of training is also discussed in a similar manner by the private pathology manager (see section 9, p112).

iii. A form of 'professional deskilling' was highlighted by two interviewees;

“some nurses now perform tests which were only usually done in the laboratory such as blood gases in ICUI don't think this is a good thing, they do seem to have problems sometimes I'm not sure if we will ever get any nursing duties” (MLSO 1, Biochemistry, Laboratory X)

“we have to train other health staff who perform pathology investigations now they are doing more and more it started with dipstick urine tests and now it has moved on to blood gas analysers that will tell you all sorts of lab. results sometimes you wonder about how they do these tests” (MLSO 3, Biochemistry, Laboratory X)

This aspect appeared to be viewed as more of a hindrance than a threat to the MLSO professional work, as the MLSO's involved seemed mainly to 'fault find' and resolve quality assurance problems for these 'external' pathological analyser users.

When questioned about the future for MLSO's, the interviewees viewed this as having three main considerations;

i. the rationalisation of departments into multidisciplinary laboratories appeared to worry some MLSO's:

“the managers want to put biochemistry and haematology analysers into one big laboratory this will give us less scope to carry out our advisory duties” (MLSO 3, Biochemistry Department, Laboratory X)

“I don't want to become a haematologist, I specialised in biochemistry because I wanted to I like this work” (MLSO 1, Biochemistry Department, Laboratory X)

However, others held a different view;

“It might be interesting to work on different analysers and do some biochemistry again but there may be problems with the training, finding time for it I think the CPSM will let work in any department once you are state-registered for one speciality” (MLSO 2, Haematology Department, Laboratory X)

ii. the second consideration, that of the increased use of automation and robotics within the laboratory is also related to the rationalisation noted in i);

“I have seen reports from Japan where blood samples are put into a rack, then they go on to a conveyer belt system along to the various analysers they are tested and the report is produced at the end, all automatically. The people

there are only machine minders that really is deskilling!" (MLSO 2, Haematology Department, Laboratory X)

This view was echoed by the pathology sales manager who said;

"In Japan, big pathology equipment corporations are attempting to get rid of MLSO's altogether I don't want to worry people but I think the time will come when MLSO's are replaced by robots then all the MLSO's will do is look after the equipment, and that could be done by robots as well!" (Pathology Equipment Sales Manager, Ex-MLSO)

iii. Another view, in contrast to ii), was that MLSO's might have some form of extended role in the future;

"MLSO's may have to move away from the laboratory perhaps into GP surgeries or some other community situationthey will have to be more mobile, I suppose almost their own agents but it will probably be a question of cost, it usually is in the NHS" (Pathology Business Manager, Laboratory X)

"MLSO equivalents in America have various roles, some are in charge of the laboratory, X-ray and other departments I could see that happening here it is only the next step in rationalisation" (MLSO 2, Haematology Department, Laboratory X)

" I think that we will gain more of the role of pathologists, possibly in a some form of combination with clinical scientists if MLA's take over our job we will be able to do what the pathologists are doing they do in private labs." (MLSO 4, Haematology Department, Laboratory X)

The latter view is ominous for pathologists and is consistent with the opinion of the private sector laboratory manager, who suggests that this is the reason why pathologists fear take-overs by the private sector companies (see next chapter).

9. PRIVATE SECTOR MLSO's

9.1. Observations and Interview Data

This section explores the differences between private sector and NHS pathology laboratories as indicated from the interview evidence in the case study and any relevant observations. Although it is not an exact empirical comparison to the NHS laboratory, there is sufficient data to give an indicative and reasonable representation of the situation of MLSO's in both sectors.

The pathology equipment sales manager, who has visited many different laboratories throughout the country, both NHS and private, noted what he saw to be a main issue;

"Private laboratories seem to be run more on a shoestring than NHS labs. They tend to have a 'jack of all trades' approach. One person (basic grade MLSO) will be doing all the different discipline tests that you would find in the NHS its a matter of quick processing of samples to get the results out with very little interpretation Its purely a profit generated system"

He then continued:

"I find it very difficult having worked in the Health Service to see how you can have a profit orientated health system, because the two are contradictory but the private sector is definitely different. They have lower numbers of staff, more automation, more laboratory assistants, longer hours of work, and basically you find the staff don't tend to have as many protective rules and regulations that you would have in the Health Service." (Sales Manager, Pathology Laboratory Equipment, ex-MLSO)

There was an apparent difference in the staffing structure between the public and private sector laboratories seen in the study. Whereas the NHS laboratory had a structure founded on job descriptions and definite responsibilities, the private sector laboratory was less formal, with no 'real' job descriptions being used. Moreover,

emphasis was placed upon actual ability to do the job, rather than educational or professional attainments. It was also noted that generally less staff were employed in the private laboratory, but according to the private sector pathology manager;

“the (private laboratory) staff are more productive as a person, so in that case the comparison between the (NHS) Trust and the Trust from a private organisation in some areas, your staff would actually be putting more through per person”

He also noted that;

“our staff our busy people, not to say that NHS staff are not busy, but it’s a totally different workload to make a comparison” (Pathology Manager, private sector laboratory)

In common with many other private sector pathology laboratories, it was observed that the private laboratory in the study had been employing unqualified laboratory assistants for a number of years. These workers perform a variety of duties, including those which are usually reserved for state-registered MLSO's in the NHS, and the view is, as the private sector pathology manager stated;

"we have been using MLA type staff for tasks which are part of MLSO jobs in the NHS laboratories..... if you employ the correct people they can do these jobs" (Pathology Manager, private sector laboratory)

This effect is also now being seen with increasing frequency in the NHS laboratories as on-going local changes to employment practice and conditions occur (previously noted in chapter 8). MLA's have been seen as a cheap form of MLSO and there is evidence to suggest that they will be increasingly utilised in a similar manner in the case study laboratory, as they have been in the private laboratory.

One NHS MLSO 3 interviewed had stated that;

"we are currently reviewing the way in which we use MLA's in the laboratory, with a view to expanding their role" (MLSO 3 Biochemistry, NHS hospital X)

It was also argued by the private laboratory manager, that the education and training of MLSO's should be based more upon technical and computer skills rather than an in-depth knowledge of physiology and medical science;

"We have training programmes for all members of staff, be it MLA's to lab. managers. They go on the different training programmes we have. We have in-house training programmes for management and computer skills. Some of our labs. are also CPSM registered to train laboratory staff, so we can take on unqualified staff and take them through college and qualify them We look for certain qualities when we take people on" (Pathology manager, Private sector laboratory)

He went on to say;

"Certainly one of the problems our organisation is facing is that the days of multi-discipline training have disappeared and to have a multi-discipline laboratory we are now having to invest heavily in this type of training whereas previously multi-discipline training was part of your studies Now obviously we are finding that people (MLSO's) are 'specialised trained' and have not been multi-discipline trained, so our MLSO's have to go on a massive re-training scheme we train the people to their capabilities and what they want to do in the future."

This training aspect leads to a more commercial approach to MLSO role in the private laboratory, with routine training in cost effectiveness and efficiency leading to an apparent 'business-like' culture;

"All our staff are actually on site in a hospital, that is private hospitals and clinical research laboratories and GP laboratories, they are also conscious of the commercial value of the organisation. So they will be constantly looking at updates and cost effective techniques, they will be thinking how can I make this more cost effective, reporting to the manager." (Pathology manager, private laboratory),

This, according to the private laboratory manager leads to a fundamental difference in the MLSO's of the two sectors;

“they (MLSO's) will be involved in the actual finance of the organisation at their site, so for example, if a patient came in they would be involved in the finance of that, so that's a totally different side to it We will get basic MLSO's who are very scientifically acknowledged, we have to give them a bit, I wouldn't say accountancy knowledge, more book-keeping knowledge to be involved in the finance, to be aware of the financial side of the laboratory and to be consciously thinking of the cost effectiveness of the laboratory.”

The view is that this places more emphasis upon the 'quality of service' aspect rather than purely technical quality as observed in most NHS laboratories. However, the private sector pathology manager argued that his company produces test results of similar technical quality to those from NHS laboratories but that they are more 'customer-friendly' in the way in which they provide their service. The 'customer-centred' approach has been expounded for many years in the private health care and has formed the basis of this sectors approach to service provision. The private sector laboratory manager supported this concept, and as a person who had worked for many years as an MLSO within the NHS, believed strongly in this business-like 'customer' approach;

"we tailor our service around the customer (service-user), who could be the requesting doctor, the individual patient or the insurance company..... we aim to give the customers what they want.... it is the main advantage we have over NHS laboratories, well I mean in the NHS you're not really, you may have a section leader looking over consumables, but certainly everybody in our laboratory will be getting involved in looking over consumables, and it is imperative that everybody does" (Pathology Manager, private laboratory)

He further stressed the importance of this organisational 'customer' approach because, referring to the patients;

“that’s all they know about the laboratory so it’s imperative to put on a good face and that it looks organised, that it’s courteous and represents a good face for the organisation, so this is drilled into the staff, as well as the presentation skills of how they approach the patient, so there’s much more of a package as opposed to basically being another laboratory and providing a result”

Looking further at this point, most private pathology laboratories are generally observed to be smaller (less staff and work-load) than those found in the NHS. This may be one reason why the 'customer-centred' approach has worked in these hospital laboratories. In similar sized (i.e. smaller) NHS hospitals and laboratories there is generally more of an observed 'community feeling', which is presumably due to good communication and a sense of working for a 'common cause', and a belief in which the aim is to provide a service 'for the good of the patient'. So the success of the 'customer-centred' approach may be related more to organisational size rather than private sector corporate culture.

In the NHS laboratory, this 'quality of service' issue was addressed by emphasis on national laboratory accreditation through the CPA system (Clinical Laboratory Accreditation) - a multi-professional body headed by NHS pathologists. In the private sector laboratory, although accreditation was also considered to be important problems had been encountered; the private sector manager interviewed stressed that quality accreditation was important to them, but they had looked to other quality standards (such as BS5750 or ISO 9000) because CPA accreditation had been 'too rigid and NHS-orientated'. Also service quality was an important consideration for NHS pathology managers when considering a change of MLSO working conditions, as noted in the issue of shiftwork (see Barr 1995a & b).

Of significant interest in the private sector, is that less emphasis is placed upon educational qualifications than on individual abilities and work-based achievements which are deemed to much more significant to the organisation. This is corroborated by the fact that the private sector laboratory in this study uses individual contracts of employment and salaries for each staff member, which are often held in secret from other employees. Again, this is an aspect which is appearing in NHS laboratories: Laboratory X has begun to use individual contracts (fixed salary) for MLSO's employed to perform the CPP shiftwork work.

9.2. Pathologists in the Private Sector

Not only do private sector laboratories hold differences for MLSO's, they also impose changes to the medical pathologists, which will have some significance to the role of MLSO's. The private sector manager interviewed, pointed out that NHS pathologists have perceived a real threat to their existence, as many private pathology laboratories function without an 'on-site' pathologist (the pathologist being employed on a part-time consultative basis and contactable by telephone if required);

"The fear is that moves to rationalise the technical aspects of pathology work will be linked to a similar process for the consultative part..... Less specialisation in the technical aspects will lead to a lesser requirement for specialised pathologists, which become more centralised into main centres as has happened with the technical work of many pathology laboratories in large cities" (Pathology Manager, private laboratory)

It may be argued that this could lead to decreased numbers of pathologists being employed in the NHS, with a possible growth and development of the clinical scientist grade. This occupational group occupies a position between the medical pathologists and non-medical biomedical scientists, and is often seen as having a less distinct role.

However some form of amalgamation between clinical scientists and MLSO's (biomedical scientists) would form a strong occupational group. This has been suggested by a number of interviewees as one of the future routes which the occupation of MLSO might take (see earlier p.110).

10. CONCLUSIONS

This study has addressed the three questions given in the introduction using a single-site case study, drawing upon the qualitative knowledge and experience of 'key informant' MLSO's from a typical NHS district hospital, combined with participant-observational data from both NHS and private sector sources. On analysing the data from the study, it is possible to draw several conclusions.

The first question set out examine the position of medical laboratory scientists (MLSO's) within the NHS and the extent to which this health care occupation has moved towards or away from the end point of 'professionalism'. It has been shown that the history and development of medical laboratory scientists (MLSO's) within the NHS has been closely linked to pathologists, who practice the branch of medicine known as pathology. The relationship between the two groups has been of a patriarchal nature, with medical laboratory scientists (MLSO's) being sub-ordinate. This has been due to differences the origins and the relative professional power of each group. Medical laboratory scientists (MLSO's) originated as untrained 'assistants' to clinical pathologists (who exist as an important branch of medicine). Following the expansion of medical knowledge, and the growing importance of pathology in modern medicine, these 'assistants' pressured for their development into qualified and state-registered technician/scientists. This resulted in the formation of an 'association' which has progressed to that of 'professional body' (the IBMS). The relationship between pathologists and MLSO's has always been patriarchal, with MLSO's being subordinate. This position has existed in various structures since the creation of the NHS, and the latest of these, the clinical directorate model in place at Laboratory X, maintains this relationship. Additionally, MLSO's have become more accountable to general managers

through this directorate structure, this being one of the main effects of the NHS reforms since the Griffith's report. However new challenges and changes in laboratory structures and for MLSO's duties will affect this. The increased rationalisation and multidisciplinary working practices in Laboratory X, as in many NHS laboratories, will also affect pathologists. Models of service provision have been suggested by the DoH's Strategic Review (1995), and will be increasingly adopted by NHS laboratories. Some of these models conform to those seen in private sector pathology laboratories. It is known that many private laboratories do not employ on-site pathologists. This may be considered as an option for the further rationalisation of NHS pathology laboratories.

MLSO's carry out most of the pathological investigations on various bodily samples sent to the pathology laboratory (Laboratory X). These analyses involve the use of manual dexterity skills and subjective assessment but these are increasingly being replaced by laboratory automation systems. The skill requirements involved in this are felt to be different rather than decreased - a re-skilling rather than de-skilling process. Whilst advances in medical technology would have occurred independently of the NHS reforms, laboratory automation is undoubtedly being used as a managerial tool for the rationalisation of certain specialised departments.

MLSO claims to 'professionalism' have been legalized, being sanctioned by the State (CPSM registration) and the characteristics of the occupational group would appear to fulfil those generally accepted for such claims (see Dawson 1992). However, significant difficulties arise when examining claims to independent practice by MLSO's, as requests to perform pathological investigations must be initiated by medical or veterinary practitioners and not the general public (this contrasts to the position of

physiotherapists and chiropodists who may practice independently of medical referral). Also significant, is the continuing subservience to the medical profession: MLSO's are not legally allowed to give clinical (medical) advice or formally propose diagnoses, they may however, give 'technical' advice and from this areas of overlap with the role of pathologists has occurred. It is these aspects, together with the grade gender ratios (see Appendix G) that make it apparent from the study that MLSO's have not fully progressed to the end-point of professionalism, and it can be argued that other terminology such as Freidson's (1970) 'paramedical' or Etzioni's (1969) 'semi-profession' are more relevant for MLSO's.

In addressing the second research question, the impact of the moves to commercialize the NHS on the MLSO's at the case study site, have been examined. Significant changes have been introduced as a result of increased managerialism (following the Griffith's report) and the NHS reforms including; the introduction of general managers and the clinical directorate management structure with devolved management duties. This increased management control has led to changes to the working practice of MLSO's such as the rationalisation of departments (multidisciplinary working), the introduction of a shift system for some departments, and individual contracts of employment for newly employed MLSO's. The study demonstrates that the moves to commercialize the NHS (mainly through Griffith's 'managerialism' and the 'internal market' system) have had a major impact on the group of MLSO's interviewed, both as employees and 'professionally'. In the study, the main impact of 'managerialism' on the MLSO's has been developed through the clinical directorate (clinical budgeting) system. The effects of this have been noted as; an increase in managerial control over laboratory departments and MLSO staff, through an increase in accountability to clinical directors

and business managers, together with an increased emphasis on 'cost control' measures (mainly cost containment), through hospital/trust management programmes (such as cost improvement programmes or cash releasing efficiency schemes). This may also lead to decreased professional accountability, but this has not been evident in the case study. There has been an increase in management control over the expenditure for laboratory equipment and consumables (all orders over a certain limit have to be counter-signed by the chief executive, at the trust hospital site in the study), and a further 'control' move by pathologists (clinical directors and heads of department) over medical laboratory scientists (MLSO's), through improved managerial accountability pathways and appraisal schemes. The emphasis on the quality of service (rather than results) aspect of pathology has also been increased (further moves in this respect will be seen following quality management and clinical audit initiatives which are currently progressing in the NHS). This increase in managerial control, together with better managerial information systems supports Harrison and Pollitt's (1994) argument that the NHS reforms have challenged the autonomy of health professionals.

The main impact of the 'internal market' reforms for these MLSO's have been through the contracting for pathology service system (ensuring further emphasis on quality of service), and leading to an increased emphasis on the commercial/business aspects of pathology, such as generating income, cost containment and user satisfaction. Again, this has been developed by general managers in pathology, leading to the rationalisation of some departments, and which are leading to skill-mix changes within the pathology laboratory at Hospital X. These findings support Leavitt's (1965) 'interacting variables' postulation, which suggested that a change in one variable would produce a resultant change in one or more of the others. Laboratory managers would argue that in terms of

the organization, the induced changes seen are of the 'desired' type (see Leavitt 1965); they have brought about increased control for managers through which they can increase service efficiency. However, the MLSO's in the study view the changes as 'undesired', with a loss of autonomy, with a certain level of deskilling and decreased professional control. However, it should be noted at this point that part of the MLSO's role is to maintain a knowledge of the latest technological developments, and the MLSO's at Laboratory X have been at the forefront of introducing new, automated technology into their work area (technology being another of Leavitt's variables). These developments would in all probability, have occurred with or without the presence of general managers, but they have nevertheless hastened the process of change.

Significant changes seen by the MLSO's in the case study at an employee level, have included; the further training required for multidisciplinary work in the rationalised laboratories, and the skill-mix changes involved (with more MLA's being employed there have been changes to general tasks, and also a more supervisory role is now required, this has given a mixed reception for MLA's from the MLSO's in the study). A major change has occurred to the out-of-hours service provision, affecting terms and conditions and take-home pay of the MLSO's involved. There has been an apparent increase in managerialism as seen in terms of; short term management contracts for clinical directors and business managers leading to an environment of constant change for laboratory staff; and a shift in emphasis from technical skills to managerial and business skills for the more senior MLSO grades (MLSO 3 & 4) by the devolution of management tasks. There has also been a shift in emphasis for the basic grade MLSO's

from scientific (biochemical dilution and analysis) to more technology-orientated skills (computer literacy, instrument maintenance and fault-finding ability).

At a professional level, the MLSO's in the study have been affected in a number of ways, some of which can be linked to the NHS reforms. Again, the rationalisation of pathology laboratory departments, leading to increased multidisciplinary working is beginning to cause problems. This is because the MLSO's involved have been 'professionally' trained in one speciality, but in order to work in a multidisciplinary laboratory involving investigations new to them, have required an extensive re-education and re-training programme. Problems have also been noticed by the MLSO's when giving professionally impartial advice, whilst working in a commercial environment (contracts have been based on a cost-per-test format, and it may be tempting to advise further tests which are not always necessary). Changes have also occurred to the professional training of MLSO's: degree-level entry and continued professional development (CPD) have been introduced. It can be argued that these have not been brought about by the NHS changes, but they may be viewed as a response by the professional body (IBMS) to an apparent weakness in MLSO professional status, which can be related back to an increase in NHS managerialism.

Increasingly, MLSO's at the case study laboratory are being employed on an individual employment contract basis, with locally negotiated terms and conditions (by the individual and/or trade union). This has led to a decrease in IBMS membership in the case study laboratory (a fall of 25% in the period from 1989 to 1993). It is interesting to note however, that this has come at a time when the IBMS appears to be strengthening its position nationally, by the implementation of a professional

development programme. In response to falling membership (see Appendix I), and in an effort to exert more control over the 'professional' aspects of MLSO training, in 1990 the IBMS introduced its 'Continuing Professional Development' (CPD) programme. This is a credit-based learning scheme similar to the 'Continuing Medical Education' (CME) for doctors, for which credits are accrued by attendance at courses and seminars, or by journal-related examinations. The CPD programme was launched at the same time as the IBMS's new corporate identity with intention of raising the status and prestige of MLSO's (now biomedical scientists) - this has been viewed by some MLSO's as a form of professional 'retaliation'. The recent review of the Professions Supplementary to Medicine Act in April 1996 by JM Consulting, may prove to be significant for MLSO's. However, as Potter (1997) has noted, exactly what effect this will have is currently a "grey area".

MLSO's working at Laboratory X are now becoming less professionally responsible and accountable to their peer group, and more accountable to general managers. This is directly linked to the loss of the Principal MLSO grade and increased managerialism within the NHS (the post of Principal MLSO has disappeared). This role has now been taken over by a business manager, with some of the duties previously carried out by the Principal MLSO being devolved to the Senior Chief or Chief grades (MLSO 3 & 4). This again, is consistent with the approaches suggested by Harrison and Pollitt (1994) in that the control over health professionals is being increased by: directly challenging the professional groups (through increased managerialism, better management information and the weakening of trade unions and professional associations), incorporating these groups into management roles (by giving them new positions or duties), and by changing the management structure in which they work (through clinical

directorates, which have changes the structure and accountability for health groups such as MLSO's).

Innovations in science and technology, leading to improved automated analysers which can perform many pathology investigations have led to a re-think in NHS pathology laboratories. Specialist departments in the case study laboratory have been amalgamated (or rationalised), under the guise of service improvements or user-friendliness, however these have been seen by MLSO's as cost-cutting measures. Pathologists too have felt threatened by these moves, and have fought not only to protect their departments but also their positions. It is unclear how the situation will develop in Laboratory X and other NHS pathology laboratories, but observations of the developments in the USA and Japan, show that automation will expand in the future. This will include an investment in robotic pathology systems which are currently being seen in Japan (Boyd et al. 1996). The extent to which this will effect the role of MLSO's has yet to be fully established.

Although the determination of the future role of MLSO's was not a specific aim of this research, some phenomenological data in the study has revealed several significant areas of development and adaption for MLSO's including: the development of managerial/budgetary skills required in the reformed NHS; the adaption to 'new' technologies, such as robotics; an important role in technology evaluation and clinical audit; and the development of an extended role, including the training and supervision of other health professionals in pathology testing (near-patient techniques); and the possibility of MLSO's moving out of the laboratory into a primary care setting. These are areas and opportunities which have been highlighted by research in the USA

(McDonald 1997) for laboratory professionals, and which may well be relevant to the future role of MLSO's (biomedical scientists) in the UK, and further research in these areas is justified.

Other health professionals, such as nurses, have seen their role extended, the reasons for this have been twofold; to relieve the burden on junior medical staff by performing the more routine, less-skilled tasks (such as phlebotomy, prescribing certain drugs), and to increase job satisfaction for nurses. This has led to certain pathology investigations being carried out by non-laboratory (and non-state registered) personnel, such as the clinical nurses found in intensive-care units. There have been a number of problems regarding the training and supervision of these personnel (personal observations), which have not always adhered to the national guidelines (from the IBMS and DoH Strategic Review). In contrast to this, it has been shown that in the USA that many laboratory technologists (MLSO equivalents) have management responsibilities outside of the laboratory (Pomerantz and LoScuito 1996), or an 'extended role'. It has been reported that similar situations have occurred in smaller, private sector UK hospitals, and it may feasibly occur at NHS hospital sites in the future.

By interviewing 'key informants' from a private sector laboratory and a pathology sales manager, it has been possible to construct a 'view' of private sector MLSO's. Although this is not an empirical comparison, it is representative enough to use as a basis for assumption, and from this contrasts and similarities can be proposed. The contrast in the situation of NHS MLSO's to that of their private sector counterparts is significant, in that NHS MLSO's seem to enjoy relatively higher staffing levels than their private sector counterparts. However, the private sector MLSO's in the study appear to gain

more responsibility (both technical and financial) at lower level MLSO grades their NHS counterparts. Yet it is apparent that there are increasingly more similarities between the two groups, as can be shown in both laboratories by the increasing use of MLA's (unqualified laboratory assistants), and the rationalisation of specialised departments into larger ones (this is not merely a local phenomenon - evidence from the private sector manager and laboratory journals suggest that this is a national trend). It is therefore possible to state that MLSO's in NHS pathology laboratories are moving towards the employment situation found in private sector laboratories. This view is supported by the DoH's Strategic Review of Pathology Services (1995). However, it should be noted that private sector laboratories have been utilising some of the NHS service aspects (such as becoming CPSM accredited training centres), which is consistent with a convergence of the two models rather than a one way shift. This trend is likely to continue by developments in private finance initiatives (PFI) and other joint venture programmes between NHS and private sector pathology laboratories. The extent to which this process will continue, will be dependent upon the new Labour government elected in May 1997. It will be interesting to see what alterations to the Conservative NHS reforms occur, and how these will further affect MLSO's.

11. APPENDICES

11.1. Appendix A: Code of professional Conduct for Biomedical Scientists (MLSO's)

All members of the Institutue shall always:

1. Exercise their professional judgement, skill and care to the best of their ability.
2. Fulfil their professional role with integrity, refraining from its misuse to the detriement of patients, employers or profesional colleagues.
3. Seek to safeguard patients and others, particularly in relation to health and safety.
4. Treat with discretion all confidential and other information requiring protection and avoid disclosing to any unauthorised person the result of any investigation or other information of a personal or confidential nature gained in the practice of their profession.
5. Act in good faith towards those with whom they stand professional relationship and conduct themselves so as to uphold the reputation of their profession.
6. Strive to maintain, improve and update their professional knowledge and skill.
7. Promote the study and development of biomedical science and the education and training of biomedical scientists.

Institute of Biomedical Sciences
12 Coldbath Square
London
June 1996 (updated)

11.2. Appendix B: MLSO's (wte) in NHS employment

1974	11210
1975	12210
1976	12560
1977	12940
1978	13090
1979	13400
1980	13630
1981	14210
1982	14410
1983	14720
1984	14550
1985	14540
1986	14620
1987	15470
1988	15180
1989	13420
1990	14900
1991	14640
1992	13190
1993	12880
1994	12480

(Source: non-medical workforce census, NHS Executive, Leeds)

11.3. Appendix C: MLSO Grading Structures and Definitions

As determined by Professional and Technical Staffs B (PTB) Whitley Council: Committee A - Medical Laboratory Scientific Officers and support grades (Medical Laboratory Assistants, Cytology Screeners) 1978

MLSO grades from 1978

Junior MLSO - a person training to become a state registered technician, has a qualification acceptable for admission to an HNC course in MLS. A junior MLSO on becoming state registered shall be promoted to the MLSO grade, effective from the date of registration with the MLT board.

MLSO - state registered technician who does the technical work of the lab., who does not come within the definition of the higher grades, may undertake specialised techniques or take charge of a small section or department. Entrance to Senior grade and above is open to MLSO's who hold the Fellowship of the IMLS (or equivalent), or Associates of the IMLS with at least 8 years experience.

Senior MLSO - an experienced state registered technician, who is in technical charge of a laboratory which employs at least 4 technicians (inc. SMLSO), OR in technical charge of a small section or department in which there are employed at least 4 technicians (inc. SMLSO), OR is regularly and mainly engaged on individual work requiring special skills or responsibility

Chief MLSO - an experienced state registered technician who is in technical charge of a laboratory which employs at least 10 technicians (inc. CMLSO), OR in technical charge of a department of a laboratory where the combined departments employ at least 25 technicians OR is in technical charge of a section of a department in a laboratory where the combined departments employ at least 63 technicians provided that he is directly responsible for 7 or more technicians, OR wholly engaged on individual and independent work involving complex examinations or research of a highly skilled nature.

Senior Chief MLSO - an experienced registered technician who has overall technical charge of a laboratory where the combined departments employ at least 25 technicians (inc. SCMLSO) OR is in technical charge of a department of a laboratory where the combined departments employ at least 63 technicians, OR is in technical charge of a specialised laboratory organised independently of the main departments and undertaking complex work not covered by the main departments.

Principal MLSO - an experienced state registered technician who has overall technical charge of the combined departments of a laboratory in which are employed at least 63 technicians (inc. PMLSO)

Appendix C (Continued)

New grade definitions following regrading 1988:

trainee MLSO - person following a course of training approved by the MLT Board of the CPSM, to become a state registered MLT as defined in the Professions Supplementary to Medicine Act, 1960.

MLSO's - only MLSO's who are qualified and registered as Medical Laboratory Technicians under the Prof. supp. to Medicine Act, 1960 may be employed in the grades specified in 3104-3107. Postholders of MLSO2 positions may qualify by virtue of relevant experience, however they would normally be expected to have followed a course of further study leading to a higher education qualification such as FIMLS, or equivalent, as would post holders at higher levels.

MLSO1 - performs the basic lab. work which corresponds to the training and qualifications of a state registered MLSO. The more experienced officers in this grade may take charge of a section of work and may supervise unqualified staff.

MLSO2 - performs the more complex work of the lab. which requires particular initiative, or is in technical charge of the operations of a small department or section of a larger department, or a combination of these and/or other duties amounting to a similar level of responsibility.

MLSO3 - in technical charge of the operations of a larger department or engaged in highly skilled individual work on complex examinations, or a combination of these and/or other duties amounting to a similar level of responsibility.

MLSO4 - in overall technical charge of organising the work of a group of pathology departments (which may include technical charge of one of those departments, if appropriate) or, in certain instances, a very large department, or making a major individual contribution which involves the application and/or development of specialised techniques.

MLA(Medical Laboratory Assistant) - person who carries out, under supervision by qualified staff, routine tasks in a lab. which do not require the skill and training of a state registered MLSO. Staff in this grade may, after appropriate training, collect blood samples from patients by venepuncture.

Cytology Screener - person who has completed a course of training and has been certified as competent by an appropriate professional body or person, and is engaged, under supervision, in the screening of samples by microscopic examination.

11.4. Appendix D: MLSO and MLA staff (WTE) at Laboratory X (1995-96)

<u>Department</u>	<u>Grade</u>	<u>Number (WTE)</u>
<u>Haematology (inc.BT)</u>	4	1
	3	2
	2	4
	1	12 (inc. 2 trainees)
	MLA	4
(Pathologists = 2)		
<u>Biochemistry</u>	4	1
	3	1
	2	3
	1	13 (inc. 2 trainees)
	MLA	3
(Clinical Scien'ts = 3)		
<u>Histopathology</u>	4	2
	3	3
	2	4
	1	8 (inc. 2 trainees)
	MLA	4
(Pathologists = 6)		
<u>Immunology</u>	4	1
	3	1
	2	2
	1	5 (inc. 1 trainee)
	MLA	2
(Clinical Scien'ts = 2)		
<u>Core Staff (reception)</u>	MLA	12
<u>Total</u>	Pathologist/Clin.Sci.	13
	MLSO	63
	MLA	25

11.5. Appendix E: NHS Salary Scales, MLSO & MLA (1995)

Effective from April 1995, as set out in the *Advance Letter (PTB) 1/95* of 20th November 1995 from the NHS Executive.

<u>GRADE</u>	<u>PAY SCALE</u>
MLA	6,873 - 8,713
Trainee MLSO	6,650 - 8,713
MLSO 1	10,509 - 13,830
MLSO 2	14,384 - 18,927
MLSO 3	19,684 - 22,142
MLSO 4	23,027 - 25,904

Note - These scales do not include the 3 scale advancement points which are available for each grade, with the exception of the trainee MLSO grade.

11.6. Appendix F: Questionnaire used to select potential interviewees

Please note that the responses to this survey are entirely confidential.

1. Personal details:

- i) Please give your sex:
- ii) Please give your age:
- iii) Please give your department in which you currently work:
- iv) What is your title and grade(eg. Senior MLSO, grade 2):

2. Brief personal history:

- i) How long have you been in NHS pathology laboratories:
- ii) What qualifications have you:

3. If you wish to volunteer for a short interview please complete and detach the slip and return it to me in the envelope provided. Please note that should you be chosen for interview any information you give will be treated in complete confidence and will not be linked to your name or given to any other source.

11.7. Appendix G: MLSO's by grade and gender in England (1992-94)

Grade	1992			1993			1994		
	All	Male	Fem.	All	Male	Fem	All	Male	Fem.
Trainee	1540	430	1110	1210	350	860	880	240	640
MLSO 1	5320	1510	3800	5480	1610	3880	5690	1640	4050
MLSO 2	3540	1840	1700	3420	1790	1620	3360	1710	1640
MLSO 3	1980	1460	530	1900	1390	510	1860	1330	530
MLSO 4	710	620	100	690	590	100	660	560	110
Total	13190	5910	7290	12880	5760	7120	12480	5480	7000

Source: Department of Health non-medical workforce census

Notes:

- All figures rounded to the nearest ten wte
- Includes grades with scale advancement points
- Includes some 'unknown' grades

11.8. Appendix H: MLA's by gender in England (1989-94)

<u>Year</u>	<u>All</u>	<u>Male</u>	<u>Female</u>
1989	3360	730	2630
1990	3740	630	3110
1991	3950	450	3490
1992	4310	470	3840
1993	4500	510	3990
1994	4660	500	4160

Source: Department of Health non-medical workforce census

Note: Figures rounded to the nearest ten wte

11.9. Appendix I: Institute of Medical Laboratory Science Membership by grade (1975-92)

<u>Year</u>	<u>Grade</u>				<u>Total</u>
	<u>Fellow</u>	<u>Associate</u>	<u>Ordinary</u>	<u>Student</u>	
1975	5549	5690	2654	799	14771
1976	5849	6017	2146	615	14706
1977	6215	6474	1992	638	15395
1978	6562	6803	1322	1006	15767
1979	6757	6865	821	1090	15604
1980	7189	7033	0	1569	15858
1981	7705	7259	0	1391	16420
1982	8270	7174	0	1311	16822
1983	8568	7059	0	1260	16953
1984	8993	7018	0	1152	17230
1985	9285	6747	0	1052	17157
1986	9636	6440	0	983	17132
1987	9891	6196	0	914	17073
1988	9953	6036	0	974	17035
1989	9655	5122	0	1049	15898
1990	8999	4741	0	907	14719
1991	8384	4481	0	823	13766
1992	8453	4675	0	721	13963

Source: IMLS

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