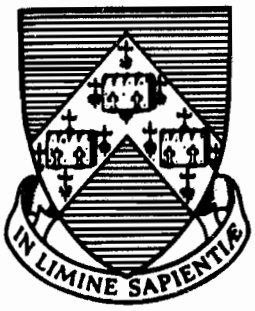

UNIVERSITY
OF YORK

CENTRE FOR HEALTH ECONOMICS

HEALTH ECONOMICS CONSORTIUM

Staff Turnover in the NHS
A Preliminary Economic Analysis

by

Alastair Gray
Charles Normand
Elizabeth Currie

DISCUSSION PAPER 46

STAFF TURNOVER IN THE NHS

A Preliminary Economic Analysis

Prepared for the DHSS

by

Alastair Gray
Charles Normand
Elizabeth Currie

Centre for Health Economics
University of York
York YO1 5DD

The Authors

Alastair Gray is an Associate Fellow and Elizabeth Currie a Research Assistant at the Centre for Health Economics, University of York. Charles Normand is Director of the Health and Health Care Research Unit at the Queen's University of Belfast.

Acknowledgements

The authors would like to thank Paula Meadows and Lucie Allen for help with typing this paper. The study was made possible by a grant from the Department of Health and Social Security.

Further Copies

Further copies of this document are available (at the price £5.00 to cover the costs of publication, postage and packing) from:

The Secretary
Centre for Health Economics
University of York
Heslington
YORK
YO1 5DD

Please make cheques payable to the University of York. Details of other Discussion Papers can be obtained from the same address, or telephone York (0904) 430000, extension 5751/2.

The Centre for Health Economics is a Designated Research Centre of the Economic and Social Research Council and the Department of Health and Social Security.

ABSTRACT

Drawing on evidence collected from 8 Regional Health Authorities and 47 District Health Authorities, this pilot study explores the level, causes and costs of staff turnover in the NHS. It finds:

1. Previous research has ignored turnover costs and neglected staff groups other than nurses.

2. One in four non-medical NHS employees leave their job each year.

3. A lower proportion of non-medical staff who leave - 8% to 15% - stay within the NHS than is sometimes thought.

4. Statistical analysis presented in section 5 suggests that it may be possible to relate turnover rates to local labour market conditions.

5. Management and administrative costs per leaver may be of the order of £240 - £381 per starter, or £277,000-£440,000 in a typical district with 1,155 non-medical leavers and starters per annum.

AYLESBURY DHA: Elizabeth Watson, Chief Nursing Officer; Christine Bailey, Assistant Director of Personnel.

N W THAMES RHA: Pamela Hudson, Regional Nursing Officer; Bob Nessling, Manpower Manager.

PNK HA: Gordon Hemsley, Director of Personnel; Brian Hambleton, Chief Nursing Adviser; Catherine Rowan, Manpower Information Officer.

HILLINGDON RHA: Sheila Roy, District Nursing Adviser, Julie Kennedy, Director of Personnel; L J Raddon, Personnel Manager.

WESSEX RHA: Kevin Holmes, Regional Nurse Manpower.

EAST ANGLIA RHA: G P Stokes, Principal Assistant Manpower Officer.

MERSEY RHA: Stephen Roberts, Senior Manpower Assistant.

S E THAMES: A P Howgego, Senior Manpower Analyst.

WEST MIDLANDS RHA: Eileen O'Donnell, Manpower Services Division.

2) Other

HUMBERSIDE COUNTY COUNCIL: Jane Todd, County Personnel Unit.

Regional and Area Offices of the Manpower Services Commission.

Anne Green, University of Warwick Institute for Employment Research.

Dr Alistair McGuire and Paul Fenn, Centre for Socio-Legal Studies, University of Oxford.

C O N T E N T S

SECTION 1

Objectives and Terms of Reference

1.1 This study was commissioned from the University of York Centre for Health Economics by the Research Management Division of the DHSS.

1.2 The objective of the study was to investigate the causes of variation in the rates of NHS staff turnover in different Districts and for different categories of staff, and to examine the current costs imposed on the NHS by staff turnover.

1.3 The main emphasis of the study was on different grades and types of nursing staff, but with the aim of including, where possible, other non-medical staff groups.

1.4 The study was designed as a pilot, carrying out preliminary research, collecting basic data, and drafting an agenda for future research.

SECTION 2

Methodology

2.1 A national picture of current turnover was constructed by approaching all RHA Manpower Divisions with a request for payroll - based turnover data that were up to date, accessible, and in a format compatible with data from other Regions. Eight Regions were able to provide some or all of the data requested within the time available, allowing uniform measurements to be drawn from a maximum of 47 Districts.

2.1 Data from the set of 47 Districts were coupled to information on local labour markets, in order to explore relationships between local labour market conditions and NHS staff turnover rates.

2.3 A sample of 6 Districts was selected to explore in detail the costs imposed by staff turnover. The 6 Districts were not selected randomly, but rather to represent the full diversity of DHAs in terms of geography, labour market conditions, demography, hospital stock, and management. Cost data were collected by visiting each District to explore the mechanisms by which vacancies were filled and the service implications of the recruitment and retention difficulties experienced by

that District. Views of staff managers on causes of turnover were solicited.

2.4 A search of published and unpublished research on turnover was conducted. The main purpose of this search was to identify a body of relevant work, and prepare a bibliography for use in a more substantial future study. However, a brief synopsis of the literature was prepared, alongside a tabulation of previous research findings. The survey does not cover forecasts of medical manpower.

SECTION 3

Literature Review

INTRODUCTION

3.1 The main points to emerge from the following review of literature on labour turnover in the Health Service are:

- Most of the studies relate specifically to the nursing profession. This reflects the fact that nurses represent the largest single category of NHS employees. (Table 3.1 summarises a selection of previous studies.)

- A high level of turnover can be expected in a largely female workforce, many of whom are of child bearing age.

- Despite this fact, a proportion of turnover and wastage from the NHS is probably avoidable.

- Variations in levels of turnover exist according to age and grade of staff.

- A proportion of turnover represents movement between Health Authorities and not loss to the NHS.

Table 3.1

Previous Turnover Studies

STUDY	SAMPLE	METHOD	PLACE	TIMESCALE	FINDINGS
LYONS (1968)	217 RNS from 1 hospital	?Questionnaire	USA	? 1 year	A positive correlation between high stress, poorly defined roles and poor communication at work with propensity to leave.
BRIGGS (1972)	'Average' intake of student nurses per course	Analysis of Available statistics	UK	1964-1971 in three year training periods	33% average wastage (with heaviest in first year and higher among pupils than students)
"	Senior nursing grades	" "	"	March 1970-April 1971	9% wastage
	Staff nurses, Midwives, ENs & Trainees	" "	"	" "	24.5% wastage
	Auxilaries & Assistants	" "	"	" "	27.3% wastage
	Welfare Officers	" "	"	" "	24.0% wastage
	Shorthand Typists	" "	"	" "	21.0% wastage
HARRIS (1974)	SRN s SENs	Analysis of available statistics?	UK	? 1 year	11% wastage from 14% . NHS
MERCER (1979)	1400 SRNs & SENs 149 leavers & 78 stayers from plus 1,000 follow-up respondents	Questionnaire, Interviews & Analysis of Hospital Records	YORKSHIRE	May 1974-May 1975 1975-1976	37% nurses in current post for 1 year or less 80% less than 5 yrs in service 6% more than 10 yrs continuous
IMS (1985)	Staff nurses	Analysis of Secondary data from DHAs	E. Birmingham Wolverhampton Nottingham W, Midlands Wessex S E Thames Scotland N Ireland	1979-1984	60% in current post less than 1 year 20-35% wastage (especially high in 22-30 year age band, decreasing to 10-15% after 30)
	Sisters	" "	" "	"	10-15% wastage rising to 20% per annum
	SRNs overall	" "	" "	"	15-20% wastage per annum
	SENs overall	" "	" "	"	15-20% wastage per annum
IMS (1987)	2737 RCN members drawn at random	Postal questionnaire	UK	2 month to access opinions over the previous year	47% of those currently working seriously considering leaving 14% already left 45% 18-24 age band seriously considering applying for jobs outside NHS
Price Waterhouse (1987)	300,000 Qualified nurses in NHS	Analysis of available statistics	UK	per annum	30,000 or 10%
Price Waterhouse (1988)	6,500 NHS & 1,100 private nurses	? Questionnaire	UK	?1987	21% of leavers expect to return to work after maternity leave but not to NHS 9% NHS nurses expected to leave during following year.
Thomas, Nicholl & Williams (1988)	2165 qualified Nurse 'joiners'	analysis of anonymous Biographical data on 'joiners' + census of nurses in post	8 NHS DHAs & 72 private sector institutions in UK	1985-1986	42% joning private acute hospitals 28% joining long-stay private nursing homes come from NHS (especinlly nurses under 30 with special skills)
Pfeffer & O'Reilly III (1987)	732 respondent community hospitals	Questionnaires to chief executive officer of each hospital	USA	1980-1981	- High level of turnover where high level of diversity in hospital workforce - turnover related to quality of relationship with Doctors & hospital administration - turnover related to wage level

3.2 Concern over labour turnover and its implications to industry is not a recent phenomenon. In 1922, Brissenden and Frankel published an analysis of turnover in industry, condemning it as wasteful. Later studies generated in the 1950s identified many of the issues currently of concern to NHS managers. Furness (1951) recognised that it was a national problem not confined to an individual firm or industry, which varied according to the area and the gender of the workforce, as well as to conditions unique to the workplace itself. His complaint that little effort had been made to identify and analyse the costs of turnover to industry are echoed today, for whilst there are many studies on the causal aspects of labour turnover within NHS institutions, few studies exist which attempt to analyse the costs to the system.

3.3 In the 1960s, systematic attempts were made to evaluate the problems of turnover and wastage in the health service. Lyons (1968) applied statistical methods to measure the effect of psychological and social conditions in the hospital environment on the propensity of registered nurses to leave the system. Using two separate samples - 217 nonsupervisory registered nurses from one hospital and a separate 149 nurses from a further ten large, short-stay general hospitals in the USA - he found a positive correlation between absenteeism and propensity to leave and "affective states of overload tension", poorly defined roles and organisational (ie

hospital) communications. His findings corroborate Revans' (1964) that high turnover and wastage amongst nursing staff resulted from poor knowledge and information in their workplace.

3.4 Wieland (1969) attempted to identify the costs of nursing turnover to the health service, in its bureaucratic and social as well as financial dimensions. Like Redfern (1978), he recognised the beneficial effects of a certain level of turnover to the system in terms of new ideas and improvements in performance, but concluded "the turnover rates now prevalent in hospitals seem generally to be much higher than needed to obtain the beneficial effects noted" (ibid, 1969). He identified the primary determinants of turnover as psychological, including level of staff satisfaction and information. Organisational determinants represented the influence of the hospital workplace as a whole, with some hospitals (especially large institutions) suffering higher turnover than others. Other determinants included age, sex and tenure, and Wieland noted that studies tend to show a negative association between turnover, higher age grouping and long tenure. In distinguishing between "voluntary" and "non-voluntary" reasons for leaving, he notes that the latter actually tend to comprise around two thirds of the total turnover rate.

3.5 Government interest in the question of manpower planning in the Health Service generated three DHSS reports in the early 1970s. The Briggs Report (1972) addressed itself to the then existing structure of nursing in the NHS and its projected future, concluding with a series of recommendations. It tabulated wastage rates for trainee nurses on an annual basis from 1964 and suggested that the rate of 33% over a three year period were rather lower than turnover rates for young working women as a whole. Turnover and wastage amongst qualified nursing staff is expressed as a percentage of different staff groups currently employed for one year or less and displayed in a comparative format against other groups of working women, such as teaching and secretarial personnel, who exhibit broadly similar percentages. Senior nursing grades have the lowest percentage of persons in post for a year or less, at 9%, compared with 27% for nursing auxilaries and assistants, 24% for welfare officers and 21% for shorthand typists. Contemporary figures for teaching staff show a 23% wastage for women teachers in the 25-29 year age category. The point is made that nursing shares broadly the same problems as other professions employing large numbers of female personnel and it is stressed that attempts should be made to distinguish groups by age and grade, to ascertain from whence the greatest loss to the system is being born.

3.6 Subsequent DHSS reports include the unpublished Harris (1974) and Maplin (1975) reports, which both specifically address issues of nurse wastage. Harris estimates an annual net wastage of 11% and 14% of registered and enrolled nurses from the system respectively, whilst Maplin makes recommendations for a more structured collection of data on the movement of nursing personnel with primary reason for leaving recorded to better understand the level and nature of the real loss to NHS institutions.

3.7 Two further studies highlight an increasing awareness of the avoidable aspects of turnover in the nursing profession together with a need to understand its underlying reasons. Birch (1975) analysed the causes of wastage amongst trainees in two five-cohort samples of students and pupils respectively from eight general hospital training schools in the Newcastle upon Tyne. He concluded an overall wastage figure for the three year period of 35.45% (of which 3.71% failed the final examinations) for students and 29.29% for pupils. Kramer (1974) conducted a detailed investigation into the concept of "reality shock" as it affects newly qualified nurses entering the workplace. Both studies identified conflict and stress as significant underlying reasons exascerbating if not actually causing withdrawal during training, or shortly after qualifying, with Birch demonstrating that official reasons stated for leaving

were frequently at variance with the real cause. Thus leavers who actually recorded marriage or pregnancy as the reason for their departure, actually revealed in the questionnaire significant and genuine reasons of dissatisfaction with aspects of their working experiences.

3.8 Mercer's "Employment of Nurses" (1979) followed a series of papers and articles published by Mercer, Mould and Taggert (1976), Mercer and Mould (1977) and Mercer and Long (1977) which all specifically dealt with mobility and turnover in nursing. The 1979 study derived from Briggs' recommendation for more detailed statistics on the demand and supply for nursing set against the broader context of the external labour market. Mercer comments upon the continued lack of good data, with a "lack of knowledge extended over every aspect of the internal labour market" and "little known about the variation between different grades of nurse, between types of hospital....".

3.9 Mercer's study was based on a sample of over 1400 enrolled and registered nurses employed in District general hospitals in Yorkshire and represented all full-time staff in post for a period of one year on 1st May 1975. For the ensuing year, more than 1000 of the original sample responded to a follow-up survey in which 149 "leavers" and 78 "stayers" were interviewed and

hospital records analysed. The scope of the survey covered movement of staff within and out of their NHS posts, with a deliberate intent to compare the turnover between different staff grades. Mercer concluded an "overwhelming impression of a work-force which comprises predominantly recent recruits concentrated in the shorter lengths of employment", with 37% of all respondants in their current post for less than one year, 80% with less than five years' service and a mere 6% with more than 10 years' continuous service in the same hospital. Mercer stresses the need to view turnover not as a problem peculiar to the Health Service, but as part of a social process or "a considered form of social action" experienced throughout the labour market. He nevertheless concludes with a warning that there are sources of discontent in hospitals which may predict problems with turnover in the NHS for the future. This study embodies two of the principal approaches to the question of turnover in the NHS. One is that high turnover, especially as it relates to nursing staff, is in some instances almost inevitable and is a predicament to be found in any situation where there is a large female workforce. The other is contained within the concluding caveat that avoidable problems are indicated within the hospital environment (Lyons (ibid), Reeve (ibid), Wieland (ibid), Kramer (ibid) and Birch (ibid)).

3.10 Concern over the question of turnover and wastage continues, together with interest in a more structured approach to modern manpower planning. This has led to a series of reports and articles, some generated by the DHSS and others by the various representative bodies of medical staff themselves, such as the United Kingdom Central Council for Nursing, Midwifery and Health Visiting (UKCC), the Review Body for Nursing Staff, Midwives, Health Visitors and Professions Allied to Medecine and the Royal College of Nursing. There have also been many contributions to the national debate in the professional journals and periodicals, although many of these represent digests of the larger surveys undertaken by such as the Institute of Manpower Studies, or Price Waterhouse.

3.11 The DHSS have continued to produce their "Manpower Planning Series" and reports such as "Nurse Manpower Planning: Approaches and Techniques (DHSS, 1983). These, together with similar studies such as Nursing Manpower: Recent Trends and Policy Options (Bosanquet and Gerard, 1985) deal with turnover and wastage as only one aspect of the whole structure of manpower planning. The following year saw the publication of the Korner report (DHSS, 1984), which contained more detailed recommendations, including the collection of minimal data sets for all categories of medical, nursing and dental staff employed by the NHS, commenting that "Data about staff

leaving and joining are used to indicate staff turnover and wastage rates and can provide valuable indications of staff morale and labour market trends" (ibid). Estimates of the costs of nurse training are in Hartley and Goodwin (1985).

3.12 The most recent surveys undertaken by the Institute of Manpower Studies (1985 and 1987) and Price Waterhouse (1987, 1988) represent the most exhaustive carried out so far for nursing staff in the NHS. The IMS survey of the "Attitudes, Jobs and Mobility of Qualified Nurses (Waite and Hutt, 1987), used a sample of 2737 respondants drawn at random from the RCN membership records to analyse and evaluate the mobility of several grades of nursing staff and the range of issues influencing them in their decisions to stay in or leave their present post to another within the NHS, or to leave the system altogether.

3.13 This report provides an insight into the numbers of nurses joining, leaving or rejoining the profession and their reasons for doing so. It also goes some way to identifying staff grade, age, sex and regional patterns, to determine where the greatest and least stability occurs. 53% of respondants had not seriously considered leaving the NHS, whilst 47% had, including the 14% who had already left it and the 8% who were considering giving up work altogether. 45% of the youngest 18-24 age

group had seriously considered applying for jobs outside of the NHS, with the 25-45 groups containing most of the sample who actually had left. The south east of Britain stands out as the overall area with the least stability in its workforce, with the greatest proportion of leavers deriving from the Oxford and four Thames Regions and Wessex following in declared intent to leave. Factors most frequently cited as reasons for wanting to leave or actually leaving included high stress, bad atmosphere at work, workloads preventing giving of one's best, or wanting to widen experience, all of which contrast with earlier studies and general premise that "unavoidable" reasons such as pregnancy, marriage or moving from the area were the primary causes of high turnover and wastage amongst nursing staff (eg. OPCS, 1981)

3.14 The reports published by the UKCC on Project 2000 (1986a&b), together with the report by Price Waterhouse (ibid,1987), all concern the implications to the profession of the Project 2000 proposals and many of the data on training, recruitment, levels of turnover and wastage relate specifically to this and are not an analysis of and comment on turnover as a whole. Data which emerge from this study indicate that some 30,000 qualified nurses leave the profession, for whatever reason, every year, representing around 10% of the total pool, that a third of recruits are returning to the profession and two thirds are newly qualified. High

wastage is identified as a problem in the context of recruitment, where a fall in the number of appropriately qualified 18 year olds by 26% between 1985 and 1995, together with the increasing competion for this group from the rest of industry and the intention to phase out the enrolled nursing grade altogether all presage an imminent shortfall in nursing manpower. Suggestion for the reduction of wastage, especially during training are made in the attempt to boost the final figure of those qualifying to find employment in the NHS.

3.15 The most recent survey conducted by Price Waterhouse (1988) analysed the opinions and intentions of 6,500 NHS and private sector nurses and 1100 former nurses. It identified dissatisfaction with pay, quality of service to patients, volume and pressure of work and standards of management. Although many of the leavers had left for the usual "unavoidable" reasons, such as pregnancy, 21% did not expect to return for reasons mentioned above. 9% of nurses currently employed expected to leave in the following year, with the youngest age group identified as expressing the greatest dissatisfaction.

3.16 The majority of these studies and surveys on turnover in the NHS relate exclusively to the nursing profession, whilst many are drawn from a limited geographical region (eg. Mercer, 1979) or, as in the IMS surveys, from RCN members only. There is still no systematic survey to

assess turnover levels for other categories of medical staff as well as for different grades of nurses, or to attempt to evaluate reasons for variations between regions and staff grades. Nor is there, to date, any study assessing the costs of turnover to the system.

SECTION 4

Turnover: Present Scale and Patterns

4.1 There is widespread interest in the NHS in levels of labour turnover, arising largely from the difficulties DHAs face in recruiting and retaining particular staff groups. But different methods of calculating labour turnover throughout the NHS make national comparisons hard to make.

4.2 There is a tendency to use "turnover" as a portmanteau expression covering all types of recruitment and retention problems. In fact turnover - defined here and throughout this report unless otherwise stated as the number of leavers during the year as a percentage of the average number of staff in post during the year - is only a measure of retention. Because retention difficulties may be concentrated in a small sub-set of a staff group, it is preferable to consider the turnover rate alongside the stability rate, defined as the average number of staff who have been in post for at least a year as a percentage of the average number of staff in post during the year. The stability rate indicates whether a retention problem is widespread or concentrated. The most frequently cited measure of recruitment problems is the vacancy rate, sometimes measured as the number of vacant posts as a percentage of the establishment, some-

times as the number of long-term vacancies (posts unfilled for at least a year) as a percentage of WTE staff in post, and sometimes as the number of vacant posts unsuccessfully attempted to be filled at least twice as a percentage of WTE staff in post.

4.3 The turnover rate is a limited measure, but has the advantage of being more routinely generated by NHS manpower information systems than the stability rate or vacancy rate. However, NHS manpower information is based largely on payroll data, and it is sometimes argued that such data overstate turnover rates by counting as "leavers" employees who are simply transferring to another job in the same DHA, or are moving elsewhere in the Region or elsewhere within the NHS. How big a problem is this? Table 4.1 summarises fragments of evidence from different parts of the NHS on the destination of leavers.

4.4 Table 4.1 indicates that between 8% and 15% of the leavers surveyed moved within the NHS. This is supported by data from West Midlands RHA, indicating that of 2690 recruits to three DHAs in 1986-87 only 7.5% were drawn from within the Region, and only another 7.5% from other NHS regions.

TABLE 4.1: DESTINATION OF NHS LEAVERS

Authority	No of Leavers Surveyed	% of leavers moving: Within District or Region	Elsewhere within the NHS	Total staying in the NHS
Aylesbury Vale	All leavers 1987-8 (1200)	3.2	6.2	9.3
Wycombe	1026 leavers 1987-8	4.3	3.9	8.2
Grimsby	190 nurse leavers 1987-8	10.0		10.0
Wessex	3,140 qualified nurse leavers 1985-6	5.9	NA	NA
Mersey	3,041 nurse leavers 1987-8	9.2	5.9	15.1

4.5 Although intra-NHS movements do not appear to constitute a large part of total turnover, they are an important topic of concern in research on training flows, for they cannot be counted as a net training loss to the NHS. They are of less concern in this study, in the sense that the non-training turnover costs borne by Districts are largely independent of the destination of leavers or source of recruits. These costs are described and quantified in Section 6 of the report.

4.6 A more awkward component of total turnover rates is medical and dental staff. Junior hospital doctors on training rotas of 6 months or 1 year are shown as leavers

although their departure is planned and predictable, and the result is a misleadingly high turnover rate. This section, therefore, deals only with non-medical staff.

4.7 Table 4.2 shows turnover rates amongst all non-medical staff in 5 RHAs constituting one-third of the NHS in England. The rate varies from 21% to 31% and averages 24%. In other words, almost one in four NHS employees leaves post each year.

4.8 Column 5 of Table 4.3 shows comparable turnover rates for all non-medical staff in 37 DHAs. The main difference compared with Table 4.2 is the much greater range of variation, the lowest observed turnover rate being 14.5%, the highest 42.1%, and the average 25.3%.

4.9 Columns 1-4 of Table 4.3 show how turnover rates vary across the main staff groups in 37 DHAs. Domestic and Ancillary staff have the highest turnover rate at 45%, although some of the extremely high observations are probably influenced by district privatisation or contracting out policies. The other three main staff groups experience more similar turnover rates, with Administrative and Clerical staff at 24% and Nursing and Midwifery the lowest at 20%.

TABLE 4.2: TOTAL ANNUAL TURNOVER AMONGST ALL NON-MEDICAL STAFF IN 5 REGIONAL HEALTH AUTHORITIES, 1987-8 OR NEAREST DATE

RHA	No of Staff in post (non-medical)	No of Leavers	Turnover (%)
East Anglia	36,002	8,641	24.0
Oxford	45,850	14,011 (1)	30.6
Wessex	51,498	10,602	20.6
West Midlands	94,013	20,840	22.2
Yorkshire	68,500	16,275	23.8
TOTAL	295,863	70,369	23.8

(1) Estimated from 9 month figure of 10,508

4.10 Before looking in more detail at different breakdowns of turnover rates, it would be useful to know if the overall rates are increasing, decreasing or constant. Unfortunately there is very little evidence. An analysis of payroll data in Harrogate Health Authority showed turnover rates amongst all nursing and midwifery staff of 24.3% in 1984-5 and 23.3% in 1985-6, compared with 23.9% in 1987-8: that is, a constant overall position. Data supplied by East Anglia HA for the period 1983 to 1987 revealed the pattern shown in Table 4.4: there was no clear pattern of change, with the exception of ancillary workers, where again privatisation and contracting out are likely to have significantly affected the figures.

TABLE 4.3: Annual Turnover by Major Staff Groups in 37 District Health Authorities

(Financial year 1987-88 or nearest date)

District	Turnover Rate for:				
	Domestic and Ancillary Staff (%)	Administrative & Clerical Staff (%)	Nursing and Midwifery Staff (%)	Professional & Technical Staff (%)	All Non-medical Staff (%)
Airedale	49.3	24.3	19.1	22.4	26.2
Aylesbury	49.4	21.8	29.4	39.0	29.3
Basingstoke	45.8	22.9	16.8	20.8	23.5
Bath	34.3	21.2	17.3	17.8	20.9
Bradford	50.4	21.1	18.6	20.9	25.2
Brighton	61.4	39.4	32.2	35.2	38.8
Calderdale	29.6	24.7	16.8	18.2	19.6
Dewsbury	36.2	29.2	11.3	17.2	17.4
Eastbourne	49.9	28.7	21.7	22.9	26.2
East Berks	76.9	46.7	29.7	23.4	33.3
East Dorset	25.5	19.2	17.8	15.3	18.2
East Yorkshire	143.3	22.6	22.3	37.2	41.7
Grimsby	57.9	23.6	21.9	17.1	28.0
Harrogate	36.9	28.5	23.9	25.8	26.8
Huddersfield	36.5	16.2	14.8	18.2	19.6
Hull	37.2	21.7	15.2	22.9	19.7
Isle of Wight	23.7	12.9	12.0	18.7	14.5
Kettering	51.0	19.4	16.4	16.2	21.7
Leeds East	25.8	23.4	18.7	22.9	21.1
Leeds West	77.4	23.0	20.9	20.2	30.4
Milton Keynes	110.8	41.9	33.0	33.1	42.1
Northallerton	54.5	19.2	22.0	13.5	22.1
Northampton	59.1	27.6	19.5	25.2	27.8
Portsmouth	31.0	20.6	14.4	17.3	18.6
Pontefract	17.2	17.6	11.9	18.6	13.9
Salisbury	39.7	24.1	26.3	22.8	27.7
Scarborough	44.7	21.1	19.1	19.2	25.0
Scunthorpe	23.8	27.3	11.3	19.6	18.9
Southampton	28.8	18.6	19.8	21.8	21.4
Swindon	34.3	19.7	17.1	19.4	20.0
Wakefield	36.1	25.1	17.9	27.1	23.9
West Berks	64.8	55.0	28.1	30.3	35.6
West Dorset	32.9	18.5	16.6	19.9	19.9
Winchester	52.8	24.0	19.7	22.0	23.6
Wycombe	77.6	39.0	21.9	19.8	29.8
York	45.9	22.9	16.1	23.9	22.8
Weighted Average	44.6	23.9	20.2	22.3	25.3

Notes: Oxford RHA Districts: Leavers = 9 months x 4/3, Anc = Domestics and orderlies, pay scale AK01 only
A&C=medical records and secretaries only,
P&T = PAMs, pharmacists and MLSOs only

Yorshire RHA Districts: P&T excludes works

Wessex RHA Districts: N&M includes agency nurses
P&T = PAMs, scientific and professional, and technical

Brighton & Eastbourne: Leaves = 10 months x 6/5.

TABLE 4.4: LABOUR TURNOVER AND STABILITY BY MAJOR STAFF GROUP OVER THE PERIOD 1983 - 1987, EAST ANGLIA RHA

Staff Group	Turnover Rate	Stability Rate
Ancillary	Up in all 8 Districts Regional change: 24% in 1983, 27% in 1987.	Down in all 8 Districts Regional change: 83% in 1983, 80% in 1987.
Adminstrative and Clerical	Up in 3 districts, down in 3, constant in 2. Regional change 25% in 1983, 27% in 1987.	Up in 2 district, down in 5, constant in 1. Regional change 84% in 1983, 81% in 1987.
Nursing and Midwifery	Up in 5 Districts, down in 3. Regional change: constant at 22%.	Down in 4 Districts, up in 2, constant in 2. Regional change constant at: 82%.
Professional and Technical	Up in 2 Districts, down in 6, Region constant at 23%.	Down in 2 Districts, up in 5, constant in 1. Regional change: constant at 83%.

Source: Personnel Directorate, East Anglia RHA

4.11 Table 4.5 shows turnover rates by staff group and age for Yorkshire RHA in 1987-8 (such analyses can be unreliable at District level because of the small number of observations in some cells). The overall pattern is quite clear: high turnover rates in the youngest age groups, falling to a much lower rate in the 40s and 50s, then rising again at retirement age. The table also shows differences between full-time and part-time staff: part-time workers have significantly higher turnover rates at all ages than full time workers, in all staff groups with the exception of nurses, whose part-time turnover rates are lower, notably in the 25 to 34 age group.

4.12 Table 4.6 conducts a similar analysis, but sorted on years of service. The pattern is not clear, but in general turnover rates peak after the first year of service, then fall sharply towards the average rate for the staff group.

4.13 Turnover rates have to be placed in the context of the size of the staff groups concerned. For example, in the 37 DHAs listed in Table 4.3, nursing staff have the lowest recorded turnover rate of the staff groups listed, yet by virtue of their numbers nurses accounted for over 48% of all leavers, compared with 31% of all leavers who were ancillary workers, 11% in administrative and

clerical posts, and less than 10% who were professional and technical workers.

4.14 Table 4.7 illustrates this point, using data for different nursing grades in Wessex RHA. Viewed in this way, it can be seen that two grades with lower than average turnover rates: registered nurses and nursing auxiliaries, together account for 56% of all nursing leavers.

TABLE 4.5: Turnover by Staff Group and Age, Yorkshire RHA, 1987-88

STAFF GROUP	AGE: 25	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60+	total
FULL-TIME										
Ancillary	43	27	25	17	17	17	15	15	32	24
Admin & Clerical	23	21	16	11	9	5	7	9	31	16
Nursing and Midwifery (qualified)	21	23	17	10	7	6	6	13	47	16
Prof & Tech (PSMs)	24	24	18	15	7	7	12	8	27	19
Prof & Tech (Technician)	18	16	13	11	5	4	5	5	20	13
PART-TIME									-	
Ancillary	52	39	37	35	30	27	28	24	40	34
Admin & Clerical	67	40	27	18	16	13	9	13	32	21
Nursing and Midwifery (qualified)	21	19	15	12	11	8	10	13	42	14
Prof & Tech (PSMs)	59	33	21	19	15	11	9	11	42	21
Prof & Tech (Technicians)	65	19	18	16	5	12	7	5	35	17

TABLE 4.6: TURNOVER BY STAFF GROUP AND LENGTH OF SERVICE, YORKSHIRE RHA, 1987-88

Staff Group	Years of Service						
	1	2	3	4	5	5+	Total
FULL TIME							
Ancillary	42	37	23	23	21	18	24
Admin & Clerical	15	28	21	22	16	11	16
Nursing and Midwifery (qualified)	10	28	25	20	21	12	16
Prof & Tech (PSMs)	13	17	24	45	19	12	19
Prof & Tech (technical)	16	23	15	13	15	9	13
PART TIME							
Ancillary	37	46	38	34	31	27	34
Admin & Clerical	41	32	15	17	14	10	21
Nursing and Midwifery	15	27	20	13	15	11	14
Prof & Tech (PSMs)	29	45	25	23	3	12	21
Prof & Tech (technicians)	27	28	19	19	21	8	17

TABLE 4.7: TURNOVER RATES AND LEAVER PROPORTIONS FOR DIFFERENT GRADES OF NURSING STAFF, WESSEX RHA, 1987

Staff Group	Turnover Rate	Leavers as a Percentage of all nursing leavers
Bank Nurses	20.1	11.7
Management/Tutorial	9.0	2.2
Registered Nurses	15.8	28.4
Health Visitors	11.5	1.8
District Nurses	9.1	1.3
Enrolled Nurses	14.1	12.8
Registered Midwives	12.7	3.4
Student/Pupil Nurses-Basic	16.3	11.0
Nursing Auxiliary	14.3	27.4
TOTAL	17.5	100.0

4.15 At district level, retention and recruitment problems are often highly localised, and areas of major concern to staff managers may not be identified easily in aggregate statistics. In the course of this study six DHAs were visited in order to obtain detailed cost information, to identify particular groups of staff with higher than average turnover rates, and to discuss with staff managers their views on the causes of high turnover rates. As mentioned in section 1, the main purpose of this part of the study was to define more precisely the topics and areas on which future research might most usefully be concentrated. The staff groups identified are listed below.

4.15.1 Harrogate: Hard to recruit nurses in high-skill areas such as theatre nurses, paediatric/SCBU

nurses, and ITU staff. Difficult in district nursing, and in the areas of elderly, mental illness, rheumatology, and young disabled. Least problems in general/acute nursing. Major problem in retaining ODAs, who are being lost to other non - NHS jobs. Difficult to recruit secretaries in general, and medical secretaries in particular. Difficult to recruit ancillary staff to hospitals in remote locations. Finally, there is a big problem with the recruitment of medical staff, such that it is almost impossible to obtain locum staff except through agencies.

4.15.2 Grimsby: Difficult to obtain theatre nurses. Difficult to recruit basic grade physiotherapists. Basic grade pharmacists are hard to retain. Medical secretaries are hard to recruit and retain.

4.15.3 Aylesbury: Difficult to recruit general nursing grades to main DGH site, but theatre nurses are not a particular problem. Biggest problem in mental health nursing is with recruiting newly qualified registered nurses. Basic grade pharmacists are a problem, but MLSOs are less of a problem than elsewhere. Secretarial staff are hard to retain, and in particular medical

secretaries, word processing staff and finance staff are very difficult to recruit at lower grades. Recruitment of occupational therapists and physiotherapists is a are problems.

4.15.4 Wycombe: Difficulties with ODAs, and PAMs, especially speech therapists, and chiropodists. Amongst administrative and clerical staff, secretaries and medical records staff are hard to retain. There is a general problem with ancillary staff recruitment, especially domestic staff and catering staff. Finance staff have been extremely difficult to retain with an almost total turnover of treasurers.

4.15.5 Hillingdon: MLSOs are hard to retain, with a lot seeming to be leaving the NHS. ODAs are "not to be had for love nor money" medical secretaries and finance staff are difficult to recruit and retain. High turnover in PAMs and PTBs cause difficulties, as recruitment is difficult.

4.15.6 Paddington: High turnover across almost all staff groups, and very high amongst large groups such as staff nurses and clerical staff. Medical secretaries and computer staff are very difficult to retain, as are finance staff.

Physiotherapy retention is poor, as is pharmacy staff and scientific staff retention. Medical staff have a very high turnover rate. District nurses, Health Visitors, and Care of Elderly staff are hard to recruit.

4.16 Staff managers offered a wide range of explanations for their recruitment and retention difficulties.

4.16.1 Harrogate: Local employment opportunities for secretarial staff, eg. with solicitors, create recruitment difficulties. Ancillary staff can find work in the local hotel and catering sector. Private nursing homes exist in significant numbers, and although they do not generally pay more, they often offer more flexibility in hours of work. In rural areas transport difficulties may create recruitment problems. Lack of job security for ancillary workers has created some retention difficulties.

4.16.2 Grimsby: Outside earnings potential is a major factor in the loss of basic grade pharmacists. National shortages or nationally imposed pay scales contribute to difficulties with physiotherapists and medical secretaries.

4.16.3 Aylesbury: The physical configuration of the main DGH site may put off nursing staff because of its complexity and size. Lack of accommodation contributes to difficulties in recruiting nursing staff. Higher outside earnings cause many of the problems with finance, secretarial and clerical jobs. House prices are a major disincentive to staff thinking of moving to the district from lower price areas.

4.16.4 Wycombe: Rates of pay are well below outside going rates, by around £2,500 in the case of secretaries. Problems in recruiting ODAs and PAMs are linked to locally high house prices. The proximity to London without a London weighting is a disincentive that may become greater following pay restructuring. Disposal of accommodation after the Rayner scrutiny has been a handicap. 20 properties were disposed of, and replacements are now being sought.

4.16.5 Hillingdon: Accommodation has been a headache, particularly since the Rayner scrutiny. Pay rates are a cause of many retention problems; for example Coca Cola is recruiting several hundred administrative staff at rates of approximately £2,000 above those prevailing in the NHS.

4.16.6 Paddington: Rates of pay are a core problem. In addition, the age profile and demographic characteristics of the resident population mean a smaller recruitment base. The cost of accommodation is a disincentive. The quality of management is an obstacle, with too much neglect of staff care. Staff mix may be a factor: for instance the wrong balance between support staff and nurses may make for lower job satisfaction in both groups, and higher stress.

4.17 Staff managers' perceptions of recruitment and retention problems are complex and varied. Often they are focussed on highly localised staff problems that could seriously disrupt the smooth running of services but are not quantitatively big enough to be picked up in routine manpower information systems. Similarly, staff managers recognise many causes of these problems, causes which may interact or may vary from one staff group or grade to another. For outside researchers, the objective must be to develop a model of recruitment and retention variations that generalises from this local reality without ignoring it.

SECTION 5

Turnover: A Labour Market Approach

5.1 As the previous section noted, staff managers offer a wide range of explanations for their recruitment and retention patterns. Some are internal to the NHS, for instance stress, or management flexibility in the use of part-time staff. Others are external, and relate to features of the local labour market and local economy. The most frequently mentioned external factors are the unemployment rate, the presence of new service industries, alternative employment opportunities in the private health care sector, better paid jobs and house prices.

5.2 A priori, one might expect the following relationships between NHS staff turnover and the local economy:

5.2.1 high unemployment to be associated with low turnover, because employees will attach a premium to continued employment;

5.2.2 a substantial local presence of service and high-tech industries to be associated with high turnover, especially amongst administrative, clerical, professional and technical staff who might readily find other employment;

5.2.3 high house prices to be associated with high turnover, as the cost of living deters inward migration and prevents the district from making appropriate appointments;

5.2.4 a large number of private/registered nursing homes and hospitals to be associated with high turnover, especially amongst nursing staff, as readily available alternative employment will encourage job mobility;

5.2.5 a high level of female manual and non manual earnings relative to the national average to be associated with high turnover, especially amongst domestic and ancillary and nursing staff, as the NHS may fail to pay the local going rate for jobs of particular skill content or level of qualification.

5.3 To test the hypotheses, a data set was compiled for 47 DHAs for which data were readily available, containing five measures of turnover, and eight measures of the local economy. These thirteen variables and their sources are listed in Table 5.1. A number of regression equations were then computed, to see how much of the variation in turnover (the dependent variable) could be "explained" statistically by variations in the local

economy (the independent variables). The results of some of these regression equations are in Appendix 1.

TABLE 5.1

Variables used in Regression Analyses, and their sources

Turnover Variables

1)	DOMT	Domestic and Ancillary Staff: leavers divided by staff in post (1987-8, Regional payrolls).
2)	ADMT	Administrative and Clerical Staff: leavers divided by staff in post (1987-8, Regional payrolls).
3)	NMT	Nursing and Midwifery Staff: leavers divided by staff in post (1987-8 Regional payrolls).
4)	PTT	Professional and Technical Staff: leavers divided by staff in post (1987-8, Regional payrolls).
5)	TOTT	All non-medical staff: leavers divided by staff in post (1987-8, Regional payrolls).

Local Economy Variables

6)	UNR	Unemployment Rate, July 1987, % (Department of Employment via National On-Line Manpower Information System).
7)	HITEC	Employment in producer services and high-technology industries as a % of all employment 1984 (Department of Employment via National On-Line Manpower Information System).
8)	ACTIV	Economic Activity rate for persons of working age, 1981 %, (census of Population).
9)	HOUSE	Mean house price in 1986 (based on market-price approvals made by the Nationwide Anglia Building Society).
10)	UNCH	Change in unemployment rate, July 1984 - July 1987, % point (Department of Employment via National On-Line Manpower Information System)
11)	NHOME	Number of places/beds in nursing homes registered with the DHA, 1987.
12)	NONMF	Average manual female weekly earnings, £'s, 1987 (New Earnings Survey, Part E).
13)	NONMF	Average Non-manual female weekly earnings, £'s, 1987 (New Earnings Survey, Part E).

(Variables 6-10 also courtesy of Anne Green and Tony Champion, Institute for Employment Research, University of Warwick).

5.4 The results of the regression equations may be summarised as follows:

5.4.1 no combination of independent variables showed a convincing relationship with domestic and ancillary staff turnover. Partly this may be because privatisation and contracting out has seriously distorted turnover measurements.

5.4.2 less than a third (Adj. R sq = 0.31) of the variation in turnover of administrative and clerical staff can be related to the local labour market measures, but the size of the private nursing home sector and the level of non-manual female wages appear to be significantly and positively related (Equation 1).

5.4.3 the best results were obtained for nursing turnover. Equation 2 indicates that almost one half (Adj. R Sq = 0.45) of the variation in nursing turnover can be related to local labour market measures. The unemployment rate is significantly and inversely related, while the size of the private nursing home sector and the level of non-manual female wages are significantly and positively related.

5.4.4 variations in turnover of professional and technical staff and of all staff, were weakly related to local labour market measures, which accounted for no more than 28% of the observed variation in total turnover rate. (Equation 3; Adj. R Sq = 0.28)

5.5 The overall results of the regression equations show a weak but significant effect of local labour market conditions on staff turnover. But it is important to bear in mind that the hypotheses they are testing have been specified crudely, that the analysis was simple and in particular that the data are incomplete and may be inaccurate. There is a poor geographical match between many DHAs and local labour market areas. There is a great deal of aggregation within staff groups, and it is possible that turnover rate may be a less appropriate indicator of labour market conditions than the long term vacancy rate. In light of these limitations and deficiencies, it could be argued that the results obtained were a quite satisfactory first step, and that further research in this area holds a good deal of promise.

SECTION 6

Turnover: Costs

6.1 Very little is known about the costs imposed on the NHS by staff turnover. Part of the reason for this ignorance is the lack of data, but another is the lack of thought that has been given to the kinds of costs, or for that matter benefits, that staff turnover may create.

6.2 This study has conducted a preliminary analysis of turnover costs, using data drawn from a small sample of DHAs: Aylesbury, Wycombe, Harrogate, Grimsby, Paddington and Hillingdon. The main purpose of the analysis was illustrative: to explore the kinds of costs that might be considered, the ways in which they might be measured, and their scale.

6.3 The components of turnover costs were identified by visiting each district and discussing in detail the procedures involved in filling a vacancy. Once the protocol was established, time and other resource inputs to the procedure were identified as far as possible.

6.4 The costs arising from turnover fall into three broad categories:

6.4.1 the costs of recruiting for a vacancy, from initial advertisement through interviewing to relocation expenses;

6.4.2 the costs of filling a vacancy while a new staff member is recruited, given that recruitment time is significantly longer than the period of notice. These costs may include overtime payments, agency fees, or indirect costs borne by patients if services are curtailed or impaired. Against such costs must be set payroll savings from an unfilled vacancy;

6.4.3 productivity costs, given that recruits will have a period of on-the-job learning before reaching the average productivity level of the previous incumbent;

6.4.4 an offsetting saving from high turnover may be the avoidance of 'incremental drift'. There is some evidence of this from the experience in Grimsby, where as Table 6.1 shows, an apparently higher than average proportion of staff are concentrated at the higher end of the relevant pay scale. As yet there are insufficient comparative data to quantify this. It could of course be argued that higher increments reflect higher skills and productivity acquired from

TABLE 6.1: INCREMENTAL DRIFT: THE DISTRIBUTION OF NURSES BY PAY POINT, GRIMSBY DHA, MARCH 1988

GRADE	TOTAL STAFF	PAY POINTS AND NUMBERS 00	01	02	03	04	05	06	MODEL AVERAGE
Acute									
Sister/CNo	45	5	3	3	3	5	3	23	06
Staff Nurse/SEN	156	21	19	14	25	10	67		05
Enrolled Nurses	113	8	5	6	7	3	9	75	06
Auxiliaries	72	4	6	3	15	4	0	40	06
Mental Handicap									
Sister /CNo	8	0	0	0	0	0	0	8	06
Enrolled Nurses	22	1	0	0	1	1	0	19	06
Auxiliaries	78	10	8	6	3	5	3	43	06
Community									
School Nurses	22	0	0	1	1	4	16		05
Health Visitors	31	0	3	1	2	2	23		05
District Nurses (Sisters)	31	1	2	1	0	0	1	26	06
Auxiliaries	32	4	2	3	4	3	2	14	06
Staff Nurses: Family Planning	18	1	0	0	0	4	13		05

experience: to the extent that this time, incremental drift is not a net cost.

6.5 Table 6.2 sets out data on turnover costs in five Districts (the sixth District visited, Hillingdon, was unable to provide data within the time available).

The methods of estimating these costs are detailed in Appendix 2, and it should be stressed that they are illustrative. However, they indicate that the management and administrative costs created by turnover amount to between £214,000 and £488,000 per annum in the districts studied. Measured against the number of starters in each district, the management and administrative costs created by turnover in these five districts varied between £240 and £381 per starter. In an average District Health Authority with approximately 1,155 non-medical employees turning over each year, these unit costs indicate an average turnover-related cost totalling £277,000 to £440,000 per annum.

6.6 Agency and overtime costs incurred filling vacant posts have not been included in this study's cost estimates, on the grounds that they are paid for largely from pay bill savings arising from vacant posts. However, there are value for money issues associated with the use of such staff, which make the level of expenditure a topic for interest. Consequently, lines 13 to 15 of Table 6.2

TABLE 6.2: ESTIMATED COSTS RELATED TO NON-MEDICAL STAFF TURNOVER IN 5 DISTRICT HEALTH AUTHORITIES, 1987-1988 (£s)

ITEM:	DISTRICT HEALTH AUTHORITY				
	AYLESBURY	WYCOMBE	GRIMSBY	HARROGATE	PADDINGTON
1. General Recruitment and Publicity Material	NK	0	0	2,000	NK
2. Campaigns/Trips	6,000	1,347	NK	3,780	NK
3. Reviewing Vacant Posts	0	1,852	3,244	0	2,700
4. Preparing Job Descriptions	1,913	1,852	1,453	1,318	2,700
5. Advertisements	40,040	58,932	33,100	50,190	175,000
6. Processing Applications	11,518	3,566	8,599	7,323	37,000
7. Shortlisting	16,468	3,272	4,479	3,960	4,770
8. Bringing to Interview	NK	NK	NK	NK	NK
9. Interviewing	11,172	11,822	10,100	12,960	51,110
10. Medical Examination of Recruits	10,354	15,785	12,379	14,866	23,010
11. Relocation	142,655	138,093	108,300	96,490	201,301
12. Induction	14,882	38,895	32,085	81,255	13,125
13. Agency Stand-ins	127,540	30,800	0	20,311	1,142,496
14. Overtime Stand-ins	NK	NK	10,800	NK	NK
15. **TOTAL**	**382,542**	**306,216**	**224,539**	**294,453**	**1,630,202**
16. **TOTAL excluding agency/overtime payments**	**255,002**	**275,416**	**213,739**	**274,142**	**487,706**
17. **TOTAL (line 16) per starter**	**240**	**268**	**265**	**381**	**325**

report agency and overtime expenditure in the five districts studied.

6.7 The districts visited were also asked for information about a type of cost associated with turnover that is important but hard to express in monetary terms: namely, reductions in patient services arising from temporary vacancies. They responded as follows:

Aylesbury: ward closures in geriatrics, spinal injuries and elsewhere, and reductions in operating theatre time;

Wycombe: temporary closure of 8 orthopaedic beds, and closure of 5 GP maternity beds for 2 months due to vacant midwife post;

Grimsby: operating lists cancelled due to shortages of anaesthetists and theatre nurses;

Harrogate: ward closures;

Paddington: ward closures and reduced operating lists.

6.8 The issue of turnover cost is badly under-researched. Because the cost of current turnover levels is not known, there is no way of knowing how much would be worth spending to reduce the current levels. The illustrative examples presented here suggest that a more substantial

research programme could produce fairly reliable estimates of turnover costs. Reliable information is also required on the extent of reductions in patient services arising from vacancies, and on value for money from the use of agency staff to fill vacant posts.

SECTION 7

A Research Agenda

7.1 The causes of staff turnover are complex, ranging from personnel management policies to factors in the local labour market. The survey of the literature shows that non-market factors have been widely researched, although these studies are of very variable quality. Little has been done to date on the external causes in the local labour market. Management and adminstrative activity associated with turnover may be costing up to £50 million per annum in the NHS in England, although there may be hidden costs and significant offsetting savings.

7.2 The results of this preliminary study suggest that effort should be concentrated on:

7.2.1 more detailed study of turnover rates, using more disaggregated groups of staff, this should include an analysis of how much of medical staff turnover results from training rotation, and how much is unplanned;

7.2.2 analysis of the influence of local labour market factors, with a better match of the geographical boundaries of the labour market and the

authorities, and analysis of vacancy rates as well as turnover;

7.2.3 more accurate costing of the processes of recruitment and training, and of the costs of vacancies. It would also be useful to explore the costs of low turnover on average salary costs;

7.2.4 investigation of how turnover changes over time in response to changing conditions. In particular it would be worth monitoring in detail the effects on recruitment and retention of the nurses pay award and restructuring, and the effect of changes in the training of nurses.

APPENDIX 1: REGRESSION EQUATIONS

EQUATION 1

METHOD OF ESITMATION = ORDINARY LEAST SQUARES

DEPENDENT VARIABLE: ADMT

SUM OF SQUARED RESIDUALS	=	1621.82
STANDARD ERROR OF THE REGRESSION	=	7.23304
MEAN OF DEPENDENT VARIABLE	=	25.5000
STANDARD DEVIATION	=	8.72044
R-SQUARED	=	0.407588
ADJUSTED R-SQUARED	=	0.312038
DURBIN-WATSON STATISTIC	=	1.2223
F-STATISTIC (5, 31)	=	4.26569
LOG OF LIKELIHOOD FUNCTION	=	-122.438
NUMBER OF OBSERVATIONS	=	37.0

VARIABLE	ESTIMATED CO-EFFICIENT	STANDARD ERROR	T-STATISTIC
C	-69.62449	30.14318	-2.309793
UNCH	-1.714364	1.636325	-1.047692
HITEC	-0.1384771	0.3583498	-0.3864191
HOUSE	-0.6090139E-01	0.1753041	-0.3474042
NHOME	0.4888612E-02	0.2309707E-02	2.116551
NONMF	0.6388398	0.2334874	2.736078

EQUATION 2

METHOD OF ESTIMATION = ORDINARY LEAST SQUARES

DEPENDENT VARIABLE: NMT

SUM OF SQUARED RESIDUALS	=	799.862
STANDARD ERROR OF THE REGRESSION	=	4.41688
MEAN OF DEPENDENT VARIABLE	=	18.3617
STANDARD DEVIATION	=	5.95664
R-SQUARED	=	0.509934
ADJUSTED R-SQUARED	=	0.450170
DURBIN-WATSON STATISTIC	=	1.6764
F-STATISTIC (5, 41)	=	8.53243
LOG OF LIKELIHOOD FUNCTION	=	-133.296
NUMBER OF OBSERVATIONS	=	47.0

VARIABLE	ESTIMATED CO-EFFICIENT	STANDARD ERROR	T-STATISTIC
C	-21.21606	15.69170	-1.352056
UNR	-0.9767204	0.2592178	-3.767953
HITEC	-0.2389409	0.1686267	-1.416981
HOUSE	-0.1498505	0.1210467	-1.237956
NHOME	0.3196702E-02	0.1149108E-02	2.781899
NONMF	0.3804713	0.1187620	3.203646

EQUATION 3

METHOD OF ESTIMATION = ORDINARY LEAST SQUARES

DEPENDENT VARIABLE: TOTT

SUM OF SQUARED RESIDUALS	=	1059.40
STANDARD ERROR OF THE REGRESSION	=	5.84587
MEAN OF DEPENDENT VARIABLE	=	25.0135
STANDARD DEVIATION	=	6.87112
R-SQUARED	=	0.376693
ADJUSTED R-SQUARED	=	0.276160
DURBIN-WATSON STATISTIC	=	1.6333
F-STATISTIC (5, 31)	=	3.74695
LOG OF LIKELIHOOD FUNCTION	=	-114.560
NUMBER OF OBSERVATIONS	=	37.0

VARIABLE	ESTIMATED CO-EFFICIENT	STANDARD ERROR	T-STATISTIC
C	-42.69486	23.40052	-1.824526
UNR	-0.6970410	0.4949416	-1.408330
HITEC	-0.9711007E-01	0.2775981	-0.3498225
HOUSE	-0.2378043	0.1724480	-1.378991
NHOME	0.1915342E-02	0.1668240E-02	1.148121
MANF	0.7406884	0.2200595	3.365855

APPENDIX 2: ILLUSTRATIVE COSTINGS

The calculation of staff costs has been simplified by taking 5 'types' of person to represent broad pay bands in the NHS, and placing all personnel covered by the costing within one of these bands.

Type 1: Nursing Aux/Personal Secretary, paid £5,485 per annum at 1986-87 rates, or £25 per day over a 220 day year.

Type 2: Staff nurse RFN, paid £7,934 per annum at 1986-87 rates, or £35 per day.

Type 3: Sister/CN 2, paid £10,823 per annum at 1986-87 rates, or £50 per day.

Type 4: DNS 3, paid £18,298 per annum at 1986-87 rates, or £80 per day.

Type 5: DNO 2, paid £28,318 per annum at 1986-87 rates or £130 per day.

Aylesbury

Publicity Material: No data.

Campaigns/Trips: 4 trips to Ireland at £1,500 each. Reviewing Vacant Posts.

Preparing job descriptions: 10 minutes per post by manager- 1,063 x £1.8 = £1,913.

Advertisements: £40,000 is budget for 1988-89.

Processing Applications: 0.6+0.9+0.6 WTE secretarial input = 2.1 WTE type 1 person = £11,518.

Shortlisting: 0.9 WTE Senior Nurse = 0.9 type 4 person = £16,468.

Bringing to Interview: Not known.

Interviewing: 3 hours average session for 4 vacancies = 266 sessions per year. 2-3 attend, equivalent to 2 ward sisters. 266 x £42 or £11,172.

Medical examination of recruits: 0.2 WTE doctor, plus 3.5 sisters, plus 1.5 secretaries in occupational health. 0.2 if time devoted to recruits = 0.2 x (5,664 + 37,880 + 8,227) = £10,354.

Relocation: Estimated. Grimsby = £108,300 for 807 vacancies, so Aylesbury = £142,655 for 1,063 vacancies.

Induction: Each unit runs inductions. Rarely less than 1 hour or more than half a day. 3 hours for all starters = 425 days of type 2 person, or £14,882.

Agency/overtime costs: Non-medical agency expenditure in 1987 - 8 totalled £318,000 on nursing staff and approximately £65,000 on other staff groups. Around one-third of agency use is to fill vacant posts. 0.33 x £383,000 = £127,540.

Wycombe

Publicity Material: No attributable costs.

Campaigns/Trips: Visits to schools, clubs, fairs, etc. Mainly local, but also to Ireland, Scotland. 2-3 trips a month, often 2 officers, but sometimes in evening, etc. Cost = 35 x 2 hours of type 4 person = £747, plus £600 travelling expenses, etc = £1,347 total.

Reviewing Vacant Jobs: Leaving form and registration prepared by manager. 10 minutes per post = 1,029 x £1.8 = £1,852.

Preparing Job Descriptions: 10 minutes per post by manager, = 1,029 x £1.8 = 1,852.

Advertisements: £58,932 in 1987.

Processing Applications: Local personnel office sends out and receives details/applications. 0.5 WTE type 1 person = £2,743, plus postage/stationery on 4 applications per post = 4,116 x 20p = £823. Total = £3,566.

Shortlisting: Shortlist prepared by manager plus boss of vacant post plus external assessor if post is senior. Procedure takes anything from 5 minutes to 3 hours. Average of 15 minutes per post by 1 type 2 and 1 type 4 person - 1,029 x (78p plus £2.4) = £3,272.

Bringing to Interview:

Interviewing: Panel normally of 2, 1 manager plus 1 other. Setting up time plus interview time equals 0.5 hour to 2.5 hours to fill time posts. 514 x 1.5 hours type 2 person plus 514 x 1.5 hours type 4 person = (£3,598 plus £8,224) = £11,822.

Medical Examinations: Estimated at average if calculated unit cost in Aylesbury (£10.00) and Harrogate (£20.68) = 1,029 x £15.34 = £15,785.

Relocation: Estimated. Grimsby - £108,300 for 807 starters, therefore Wycombe = £138,093 for 1,029 starters.

Induction: 1 full day for all new staff. Course held once a month in 3 centres, involving Fire Officer, Occupational Health and Personnel. 36 x 1 type 4 person day at £80 = £2,880. 1,029 x average type 2 person day of £35 = £36,015. Total = £38,895.

Agency/Overtime costs: Overtime discouraged. Agency expenditure in 1987 = £40,000 on secretarial staff, £17,000 on ODAs, £20,000 on nursing. If 40% of agency input is assumed to fill for vacant posts, total = 0.4 x £77,000 = £30,800.

Grimsby

Publicity Material: No attributable costs.

Campaigns/Trips: No data.

Reviewing Vacant Posts: Chief Officers group (UGM, Finance Manager/DPO/DNA/Administrator) meets regularly to review vacant posts. Meetings take 1-1.5 hours, review on average 6 cases. Approximately 30 meetings per year = 5 x 30 x 1.25 x £17.3 = £3,244.

Preparing Job Descriptions: 10 minutes per post by manager = 807 x £1.8 = £1,453.

Advertisements: £33,100 in 1987.

Processing Applications: Estimated at average if calculated unit cost in Harrogate (£10.18) and Aylesbury (£11.13) = 807 x £10.65 = £8,599.

Shortlisting: By interview panel. 2-3 in attendance, average time equals 20 minutes per vacant post = £2.22 of type 3 persons' time. 807 x 2.5 x £2.22 = £4,479.

Bringing to Interview:

Interviewing: 3 hours average session per four vacancies = 202 sessions per year. 2-3 attend, equivalent to 2.5 sisters/CN2s. 202 x 2.5 x £20 = £10,100.

Medical Examinations: Estimated at average if calculated unit cost in Harrogate (£20.68) and Aylesbury (£10.00) = 807 x £15.34 = £13,379.

Relocation: £108,300 in 1987.

Induction: 1 full day for all staff plus some on-the-job training. Training done by Finance Officer, Administrator, Fire Prevention Officer. Totals 4 WTE days per month of type 4 person = 48 x £80 = £3,840, plus 807 x average type 2 person day of £35 = £28,245. Total = £32,085.

Overtime costs: £900 per month to cover vacant posts in operating theatres = £10,800.

Harrogate

Publicity Material: £4,000 in last 2 years.

Campaigns/Trips: About 20 days of activity per year, with at least 50% of stalls manned by 2 people, giving about 40 man-days a year. 40 days at mid-point of type 4 personnel = £3,200, plus expenses of £5 a day local, £100 a day London = £580, total £3,780.

Preparing job descriptions: 10 minutes per post by manager, = 719 x £1.8 = £1,318.

Advertisements: Not known. Average for other four districts = £69.80 per post, therefore Harrogate = £50,190 for 719 posts.

Processing Applications: 0.35 WTE type 3 person = £3,788
0.5 WTE type 1 person = £2,742
0.1 WTE type 2 person = £793
TOTAL = £7,323

Shortlisting: 2 hours per shortlist of 4 by type 4 person = 360 x £11 = £3,690.

Bringing to Interview: Not known.

Interviewing: 4 hours average per interview session including wind-up, run-down and 4 candidates. 2 attend = Nurse Manager

and Ward Sister. 180 sessions a year at £44 plus £28 per session = £12,960.

Medical Examinations: 2.32 WTE nurses plus 1 doctor on 2 sessions a week at Occupational Health - 50% of work related to recruitment = 1.16 WTE type 2 person and 0.2 WTE type 5 person, or £9,203 plus £5,663.

Relocation: Estimated. Grimsby = £108,300 for 807 starters, therefore Harrogate = £96,490 for 719 starters.

Induction: All staff in induction programme of 3 days, plus 6 days per month input by officers, etc, 719 x 3 = 2,157 days at type 2 person = 75,495, plus 72 days at type 4 person = £5,760. Total = £81,255.

Agency/Overtime costs: Average WTE agency nurses January-March 1988 = 6.4. Assuming 40% of use attributable to vacant posts = 0.4 x 6.4 x (type 2 person annual pay) £7,934 = £20,311.

Paddington

Publicity Material:

Campaigns/Trips: Mainly open days relying on local press coverage.

Reviewing Vacant Posts: Leaving form prepared by manager. 10 minutes per post = 1,500 x £1.8 = £2,700.

Preparing Job Descriptions: 10 minutes per post by manager = 1,500 x £1.8 = £2,700.

Advertisements: Estimated at £175,000-£200,000 annually in 1987.

Processing Applications: 100,000 job details/applications processed each year. 3 minutes of type 1 person time per processing, plus 20p materials and postage = 100,000 x 37p = £37,000.

Shortlisting: Prepared by manager plus boss of vacant post. Average of 15 minutes per post by 1 type 2 person and 1 type 4 person = 1,500 x (78p plus £2.40) = £4,770.

Bringing to Interview:

Interviewing: Panel normally of 2, 1 manager plus 1 other. Approximately 10,000 interviews conducted annually, 6 per 2 hour session = 1,667 sessions. 2 hours of 1 type 2 person = £9.33. 2 hours of 1 type 4 person = £21.33. 1,667 x (£9.33 plus £21.33) = £51,110.

Medical Examination of Recruits: Estimated at average of calculated unit cost in Harrogate (£20.68) and Aylesbury (£10.00) = 1,500 x £15.34 = £23,010.

Relocation: Estimated. Grimsby = £108,300 for 807 starters, therefore Paddington = £201,301 for 1,500 starters.

Induction: Wide variation between units and many nurses place straight into wards. If half the staff get half a day, cost = 750 x £17.50 = £13,125.

Agency/Overtime costs: 256 WTE agency nurses in use in week ending 30 September 1987, plus approximately 45 other non-medical staff [80% of medical secretary establishment is agency, at an annual cost in excess of £200,000]. Approximately 40% of agency expenditure is directly related to unfilled vacancies. Total agency expenditure = 300 x type 2 person plus 20 per cent, = £2,856,240. 40% = £1,142,496.

BIBLIOGRAPHY

ABEL P M, FARMER PJ, HUNTER M and SHIPP P J (1976), 'Nursing Manpower 2; A Sound Statistical Basis for Policy Making', Nursing Times 8, Occasional Papers 5-8.

ANNEXE OF RESEARCH STUDIES FOR COMMISSION ON NURSING EDUCATION (1985), The Education of Nurses; A New Dispensation, Royal College of Nursing.

BEECHAM, L (1987), 'Red Alert Warning on Nursing, Says RCN Secretary', British Medical Journal Vol 294: 1044.

BENDALL, E R D (1967), 'Calculating Wastage Rates', Nursing Times 63: 1300-1301.

BENDALL, E (1984), 'Patterns of Recruitment', Senior Nurse, Vol 1, No 12; 1984: pp 18-19.

BIRCH, J (1975), To Nurse or not to Nurse: An Investigation into the Causes of Withdrawal during Nursing Training, RCN London.

BOSANQUET, N (1985), 'Where have all the Nurses gone?', Nursing Times 1985; 81: 43, 16-17.

BOSANQUET N, GERARD K (1985), Nursing Manpower: Recent Trends and Policy Options, Discussion Paper 9, Centre for Health Economics, York 1985.

BOSANQUET, N (1987), 'Nursing Manpower', British Medical Journal, 294: 791-792.

BRIGGS, A (1972), Report of the Committee on Nursing, Command 5115, HMSO, London.

BRISSENDEN P F and FRANKEL E, Labour Turnover in Industry: A Statistical Analysis, (Macmillan, New York, 1922).

BRITISH MEDICAL JOURNAL, 'Hospital Medical Staffing: Achieving a Balance. Government Announces Plan for Action', British Medical Journal, Vol 295: 1152-1155.

CENTRAL STATISTICAL OFFICE (1987), Annual Abstract of Statistics, London, HMSO, 1987.

CHAPLIN D and WILLAND S (1986), 'Warm Lure of Chilly Nursing Statistics', Hospital Doctor, 23 October 1986.

COMMITTEE OF PUBLIC ACCOUNTS, Control of National Health Service Manpower, London, HMSO, 1987.

COUPLAND V A, GREEN J H, KITZINGER J V, RICHARDS M P M (1987), 'Obstetricians on the Labour Ward: Implications of Medical

Staffing Structures', British Medical Journal, Vol 295: 1077-1079.

DAVIES C and ROSSER J (1986), Processes of Discrimination: A Report on a Study of Women Working in the NHS, London: DHSS, 1986.

DEAN, D, Manpower Solutions, London: RCN, 1987.

DELAMOTHE, T (1988), 'Nursing Grievancies':
I Voting with their feet, NT, Vol 296: 6614, 1988
II Pay, NT, Vol 296: 6615, 1988
III Conditions, NT, Vol 296: 6616, 1988
IV Not a profession, not a career, NT, Vol 296: 6617, 1988
V Other places, other solutions, NT, Vol 296: 6619, 1988
Nursing Times, Vol 296, Nos 6614-6619, 1988.

DHSS (1978), Medical Manpower - The Next Twenty Years: A Discussion Paper, London, HMSO.

DHSS (1982), Nurse Manpower: Maintaining the Balance.

DHSS (1983), Nursing Staff, Midwives and Health Visitors, London, 1983.

DHSS (1983), Nurse Manpower Planning: Approaches and Techniques, London, HMSO.

DHSS (1983), 'The Collection and Used Nurse Movement Information', HMSO, London, Manpower Planning Series 7.

DHSS (1983), Dental Manpower: Report of the Departmental Study Groups Dental Manpower.

DHSS (1985), Report of the Advising Committee for Medical Manpower Planning, DHSS, 1985.

DHSS (1986), Mix and Match: A Review of Nursing Skill Mix, London: DHSS, 1986.

DHSS (1987), NHS Hospital Activity Statistics for England, 1974-1986, London: DHSS, 1987. Statistical Bulletin 5/87.

DICKSON, N (1987), 'Best Foot Forward (Recruitment)', Nursing Times, 7 January 1987, Vol 83; 1: 40-41.

EASTAUGH, S R, 'The Impact of the Nurse Trainig Act on the Supply of Nurses, 1974-1983', Inquiry, Vol 22, No 4, Winter 1985.

FISHER, R (1984), 'Is Anybody There?', Senior Nurse, Vol 1, No 34, 1984.

FURNESS, H J (1951), The Cost of Labour Turnover, The Institute of Cost and Works Accountants, London W1.

GAZE H, COTTINGHAM M, HOLMES P (1987), 'Man Appeal: Men in Nursing', Nursing Times, Vol 83: 20; pp 24-27, 20 May 1987.

GREATER GLASGOW HEALTH BOARD (1984), Gartnaval General Hospital Leavers Study, Divers Office.

GREEN J, KITZINGER J, COUPLAND V (1986), The Division of Labour: Implications of Medical Staffing Structures for Midwives and Doctors on the Labour Ward, Child Care and Development Group, 1986.

HALSBURY (1974), Report of the Committee of Enquiry into the Pay and Related Conditions of Nurses and Midwives, HMSO, London.

HANSON M, PATCHETT T (1986), 'When the Tap Runs Dry', Nursing Times, 31 December 1982, Vol 82; 52: 26-28.

HARPER, L (1986), 'All Mixed Up - Skill Mix', Nursing Times, 29-31, 26 November 1986.

HARRIS, J (1974), 'Nurse Wastage Study', Unpublished Report, DHSS: London, 1974.

HARTLEY, K AND GOODWIN, L (1985), The Costs of Nurse Training Discussion Paper 6, Centre for Health Economics, York, 1985.

HEALTH EMERGENCY (1987), 'Nursing Shortage Walks London', Health Emergency, 1987, Ap 3.

HEALTH TRENDS (1985), 'Medical and Dental Staffing in the NHS', Medical Manpower in Health Trends, 1985, Education Division, DHSS, Vol 17, No 3: p 45.

HEALTH TRENDS (1987), 'Medical and Dental Staffing Prospects in the NHS in England and Wales in 1986', Medical Manpower and Education Division, DHSS, Health Trends, August 1987, Vol 19, No 3: p 1.

HOCKEY, J (1987), 'A Picture of Pressure: Nurse Wastage', Nursing Times, Vol 83; 27: pp 28-31, 8 July 1987.

HUTT, R (1985), Chief Nursing Officer Career Profiles: A Study of Backgrounds, Brighton, IHS, 1985.

HUTT R, CONNER H, HIRSH W (1985), The Manpower Implications of Possible Changes in Basic Nurse Training, A Report for the RCN's Commission on Nursing Education, Institute of Manpower Studies, 1985.

HUTT R and WAITE R (1987), Attitudes, Jobs and Mobility of Qualified Nurses, Institute of Manpower Studies, Report No 130, 1987.

INSTITUTE OF HEALTH SERVICES YEAR BOOK (1988), The Hospitals and Health Services Year Book, London, Institute of Health Service Management, 1988.

INSTITUTE OF MANPOWER STUDIES, (1979), Nurse Manpower Systems for South West Thames Regional Health Authority.

JOINT CONSULTANTS COMMITTEE, Chairman of Regional Health Authorities (1986), Hospital Medical Staffing: Achieving a Balance, London: DHSS, 1986.

KNIGHT, J E (1965):
- Recruitment and Wastage of Nursing Staff (1): Introduction, Nursing Times, 61: 1051-1053.

- Recruitment and Wastage of Nursing Staff (2): - Who Comes, Stays or Goes?, Nursing Times, 61: 1540-1542.

- Recruitment and Wastage of Nursing Staff (3): Summing Up, Nursing Times, 61: 1540-1542.

KORNER, E (1984), Third Report to the Secretary of State, By the Steering Group on Health Services Information, DHSS, HMSO, London.

KRAMER, H (1974), Reality Shock: Why Nurses Leave Nursing, C V Mosby, St Louis, USA.

Laing's Review of Private Health Care, 1987, A Directory of Independent Hospitals, Nursing and Residential Homes and Related Services.

LAVERS, R J (1978), 'The Morale of NHS Staff', On Culyer A J, Wright K G (Editors), Economic Aspects of Health Services: 157-164.

LEWIS, B (1980), 'Wastage from Nurse Training', Nursing Times, November 1980.

LYONS, T F (1968), Nursing Attitudes and Turnover, Industrial Relation Center, Iowa State University, USA.

LYONS, T F (1972), 'Turnover and Absenteeism: A Review of Relationships and Shared Correlates', Personnel Psychology, 25: 271-281.

McCAIG, J (1985), 'Hospital Staffing Structure: Ideas for the Future', The Consultant, 1985; 9: 8-10.

MacGUIRE, J (1969), Threshold to Nursing, Occasional Papers on Social Administration, No 30, Bell and Sons, London.

McNAMEE R, KEEN R I, CORKHILL C M (1987), 'Morbidity and Early Retirements Among Anaesthetists and Other Specialists', Anaesthesia, 1987; 42; 133-140.

MANDER, R (1987) (Unpublished PhD Thesis), The Employment and Prebest of Questionnaires to be used for a Study and the Employment Decisions of Newly Qualified Midwives, Unpublished PhD Thesis, 1987, (Submitted but not examined at time of writing).

MANDER, R (1987), 'Who Needs Midwifery?', Nursing Times, Vol 83; 26: pp 34-35, 1 July 1987.

MAPLIN (1975), Leavers (Standard Measures and Classification, Manpower Planning and Personnel Information, No 1, First Report of the DHSS/NHS Sub-group, DHSS London (unpublished).

MERCER, G (1979), The Employment of Nurses, Croom Helm, 1979.

MERCER, G (1985), 'On the Move', Senior Nurse, Vol 2: 4, 30 January 1985.

MERCER G and LONG A (1977), 'The Turnover of Labour in Nursing', Parts 1 and 2, Health Services Manpower Review, in 2 parts, Vol 3, Nos 3 and 4, August 1977.

MERCER G and MOULD C (1977), An Investigation into the Level and Character of Labour Turnover Amongst Trained Nurses, Department of Sociology, Leeds University.

MERCER G, MOULD C and TAGGART L (1976), 'Nurses on the Move' in Nursing Times, 72: 441-443.

MOORES, B (1971), 'Patterns of Student Nurse Wastage' Internal Journal of Nursing Studies, 8: 61-71.

MOORES, B (1979), 'The Cost and Effectiveness of Nurse Education', Nursing Times, June 1979.

NATIONAL UNION OF PUBLIC EMPLOYERS AND THE LOW PAY UNIT (1987), Nursing a Grievance: Low Pay in Nursing, London, NUPE and LPU, 1987.

NICHOLSON N, WALL T AND LISCHERSON J (1977), 'The predictability of absence and propensity to leave from employee's job satisfaction and attitudes toward decision-making', Human Relations, 30: 499-514.

NURSING AND MIDWIFERY STAFF NEGOTIATING COUNCIL (Staff Side) (1987), Face the Facts, London, 1987.

NURSING TIMES (1987), 'On the Move', Nursing Times, Vol 83, No 19, 1987.

OPCS (1981), Qualified Manpower, HMSO, 1981.

OXFORD REGIONAL HEALTH AUTHORITY (1984), Regional Nurse Training Strategy 1984-1994.

PARKHOUSE, J (1977), 'Simple Model for Medical Manpower Studies', British Medical Journal, 1977; 2: 530.

PARKHOUSE, J (1978), Medical Manpower in Britain, Edinburgh: Churchill Living Standard, 1978.

PARKHOUSE, J (1987), 'Hospital Medical Staffing: Our Hope for Years to Come', British Medical Journal, 295: 1157-1158.

PARKHOUSE J, BENNETT D, ROSS J (1987), 'Medical Staffing and Training in the West Midlands' Regions', British Medical Journal', 294: 914-916.

PARKHOUSE J, BENNETT D, ROSS J (1987) 'Medical Staffing and Training in the West Midlands' Regions', British Medical Journal, 294: 1552.

PARKHOUSE J, O'BRIEN J M (1984), 'Medical and Dental Training and Staffing in a Region - the Long and Short of it', British Medical Journal, 1984; 288: 1773-1775.

PARKHOUSE J, ROSS J (1986), 'General Medicine in the Eighties', British Medical Journal, 1966; 293: 816.

PETTMAN, B O (1973), 'Some Factors Influencing Labour Turnover: A Review of Research Literature', Industrial Relations Journal, 4: pp 43-61.

PETTMAN, B O (Editor) (1975), Labour Turnover and Retention, Gower Press, Essex.

PFEFFER J and O'REILLY C III (1987), 'Hospital Demography and Turnover Among Nurses', Industrial Relations, Vol 26, No 2.

PORTER L W, STEERS R M, MOWDAY R T and BOULAIN P V (1974), 'Organisational Commitment, Job Satisfaction and Turnover among Psychiatric Technicians', Journal of Applied Psychiatry, 59, (5) 603-609.

POUNDS, F J (1964):
- The Sick Nurse I: A Ten Year Review at Kings College Hospital, London, Kings College Hospital, London, 1969.

- The Sick Nurse II: A Review of the Years 1964-1968 at KCH, London.

PRICE WATERHOUSE (1987), Report on the Costs, Benefits and Manpower Implications of Project 2000, London UKCC, 1987.

PRICE WATERHOUSE (1988), 'Nurse Retention and Recruitment', April 1988.

REDFERN, S J (1978), 'Absence and Wastage in Trained Nurses: A Selective Review of the Literature', Journal of Advanced Nursing, 1978.

REID, N (1983), The Effective Training of Nurses: Manpower Implications, Paper to RCN, October 1983.

REID, Norma G (1986), 'Nurse Manpower: The Problems Ahead' Internal Journal of Nursing Studies, Vol 23, No 3: pp 187-197, 1986.

REVANS, R W (1964), Standards for Morale: Cause and Effect in Hospitals, National Provision Hospitals Trust, Oxford University Press, London.

REVIEW BODY FOR NURSING STAFF, MIDWIVES, HEALTH VISITORS AND PROFESSIONS ALLIED TO MEDICINE (1987), Fourth Report on Nursing Staff, Midwives and Health Visitors, London, HMSO, 1987: 4.

ROYAL COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS (1983), Report of the Manpower Advisory Sub-Committee of the Royal College of Obstetricians and Gynaecologists, London, RCOG, 1983.

RCN (1987), Shortage of Nurses in London, London, RCN, 1987.

RCN (1987), Face the Facts on Nursing, London, RCN, 1987.

SAMUEL, P J (1969), Labour Turnover? Towards a Solution, Institute of Personnel Management, London.

SCOTT-WRIGHT M, GILMORE M, FIERNEY, 'A Nurse/Graduate in Nursing: Preliminary Findings of a follow-up Survey of Former Students of Edinburgh University Degree/Nursing Programme', Internal Journal of Nursing Studies, Vol 16 (2), 1979.

SCOTTISH HOME AND HEALTH DEPARTMENT (1975), The Movements of Hospital Nursing Staff in Scotland, SHHD, Nursing Manpower Planning Report, No 5 (unpublished).

SCOTTISH OFFICE (1987), Staffing the Service - The Next Decade, Edinburgh: SHHD, 1987.

SINGH A, SMITH J (1975), 'Retention and Withdrawal of Student Nurses', International Journal of Nursing Studies, Vol 12, 1975.

SLACK, P (1987), 'Winds of Change', Nursing Times, 83; 9: 40-41, 4 March 1987.

HMSO, SOCIAL SERVICES COMMITTEE (1981), Fourth Report from the Social Services Committee, 1980-1981: Medical Education with Special References to the Number of Doctors and the Career Structure in Hospitals, London, HMSO, 1981 (HC31-1).

SOCIAL SERVICES COMMITTEE (1986), Fourth Report from the Social Services Committee, 1985-1986: Public Expenditure on the Social Services, London, HMSO, 1986.

STRIDE, R (1986), 'Consultants' Outcry at Short Style NHS', Hospital Doctor, 1986; 6: 1.

THOMAS K J, NICHOLL J P, WILLIAMS B T, (1988), 'A Study in the Movement of Nurses and Nursing Skills between the NHS and the Public Sector in England and Wales', International Journal of Nursing Studies, Vol 24, No 1: pp 1-10, 1988.

UNITED KINGDOM CENTRAL COUNCIL FOR NURSING, MIDWIFERY AND HEALTH VISITING (1986b), Project 2000: The Project and the Professions of Results of the UKCC Consultation on Project 2000 Project, Paper 7, The Council, London.

UNITED KINGDOM CENTRAL COUNCIL FOR NURSING, MIDWIFERY AND HEALTH VISITING (1986), Project 2000: A New Preparation for Practice, London UKCC, 1986.

UNITED KINGDOM HEALTH DEPARTMENTS, JOINT CONSULTANTS COMMITTEE, CHAIRMAN OF REGIONAL HEALTH AUTHORITIES (1987), Hospital Medical Staffing: Achieving a Balance: Plan for Action, London, DHSS, 1987.

VALLANCE-OWEN, A (1988), 'Hospital Medical Staffing in Scotland: The Shaw Report', British Medical Journal, Vol 296: 224-226.

VAN DER MERWE R and MILLER S (1971), 'The Measurement of Labour Turnover: A Critical Appraisal and a Suggested New Approach', Human Relations, 24: 233-253.

VAUGHAN, D H, 'Medical Staffing and Training in the West Midlands' Region (Response)', British Medical Journal, 294: 1162.

VOUSDEN, M (1988), 'Where have all the Nurses gone?', Nursing Times, Vol 88; 4: pp 28-31, 24 January 1988.

WAITE, R K, 'Nurses Attitude to Nursing', Health Care, July 1987.

WAITE R, HOCKEY J, PYNE R (1987), 'Waste Not, Want Not', Nursing Times, Vol 83; 27: pp 24-27, 8 July 1987.

WAITE R, HUTT R (1987), Attitudes, Jobs and Mobility of Qualified Nurses: A Report for the Royal College of Nursing, Brighton: Institute of Manpower Studies, Report No 130, 1987.

WALSH K, McGILL D (1982), The Tyne Labour Market, Health Service Recruitment on Tyneside, HMSO, (1982).

WESSEX REGIONAL HEALTH AUTHORITY (1984), Wessex Age, Loss and Turnover Figures, 1983-1984.

WEST MIDLANDS (1986), 'The Drop-Out Factor', Nursing Times, 31 December 1986, Vol 82; 52: 29-31.