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A “Ready Reckoner” for Staff Costs in the NHS. Volume I. Estimated Unit Costs

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Jane Dennett, Roger Cooley
and Adam Slight**

PSSRU discussion paper DP1412/2
September 1998

The **PERSONAL SOCIAL SERVICES RESEARCH UNIT** undertakes social and health care research, supported mainly by the United Kingdom Department of Health, and focusing particularly on policy research and analysis of equity and efficiency in community care, long-term care and related areas—including services for elderly people, people with mental health problems and children in care. The PSSRU was established at the University of Kent at Canterbury in 1974, and from 1996 it has operated from three sites:

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Foreword

This is the first volume of a report of a Department of Health funded project which has developed a Ready Reckoner for estimating staff costs in the NHS. This volume identifies the default values provided within the software for each health service professional and provides background information to the estimation of these defaults. The second volume provides a more detailed explanation of the methodology used and the derivation of the values. This is summarised on the following pages.

A key issue in the estimation of the costs is that the approach used and the elements included depend on the context of the costing exercise. The estimated costs identified in this first volume and provided as defaults in the software reflect as far as possible comprehensive long-term social costs. For some purposes, however, the interest is in the cost to the wider NHS or to the provider organisation. In such cases the software provides the facility to easily amend the estimates by excluding or replacing certain elements.

The estimates provided include, for the first time, information about the investment costs required in order to qualify health service staff. These are important costs when considering the long-term implications of changes in the workforce. For the most part it is these costs that need adjusting when the interest is narrower than the broad social cost.

To estimate long-term costs to the wider NHS

All nurses, physiotherapists, OTs and radiographers

Exclude current estimates of pre-registration training living expenses and replace with an estimate of the average bursary paid. Our estimates of 1997/8 bursary levels were of the order of £4,900 per year for nurses, £1,800 per year for physiotherapists, £2,000 per year for OTs and £2,600 per year for radiographers. Include tuition costs and costs of clinical placement.

Speech and language therapists and dietitians

Exclude all investment costs in qualifications

Doctors

Exclude tuition costs of pre-registration training and the cost of living expenses. Include the costs of clinical placement during pre-registration training and all post-registration training costs.

To estimate costs to the providing trust

The costs of qualifying staff can be regarded as a sunk cost from the perspective of the trust. Investment costs of qualifications are therefore best excluded entirely for all groups of staff unless there is specific training required for the post. In this instance there is scope within the software for including information about the costs of training and how long it is expected to last.

Trusts may want to take into consideration the fact that a proportion of junior doctors' salary costs are met from central government funding which is allocated to trusts to compensate for the lost productivity due to ongoing training.

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We have received a great deal of support, help and advice from a wide number of individuals during the course of the research. We would like to thank those who sat on the very active and helpful Advisory Group for the project: Jeremy Hurst, Hedley Hilton, Gabriel Serota, Nicky Cogan, Sue Read, Owen O'Donnell, Jennifer Beecham and Simon Old. The liaison officers throughout the project have been most helpful and supportive: Elizabeth Meerabeau, Susan Lonsdale and Claire Callender. We are grateful for advice and information from a wide number of individuals including Judy Presnell, Gill Bellord, David Kernick, John Ford, Jenny Griffiths, Sheilagh Richards, Marcia Beer, Sarah Robinson, Michael Goldacre, Myfanwy Lloyd Jones, Richard Reed, Sandy Goulding, Gill Clack, Keith Ryde, Pat Kentley, Philippa Peck, Roger Clayton, Jane Lawson and Andrew Fenyo. We are also very grateful to all those people in the trusts that provided helpful advice and information, and to those in the higher education institutions that responded to our frequent requests for information.

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Summary

1. With nearly a million people (equivalent to 764,000 whole time equivalents) on the payroll, the NHS is one of the largest employers in the world. The workforce is not only large, it is also highly trained and very costly. Total expenditure on the NHS was £33,500 million in 1995-96 with sixty-eight per cent of Health Authority and NHS expenditure being on wages and salaries (Department of Health, 1998). The degree to which this workforce is employed in a cost-effective way clearly has important implications for what can be produced from such a large-scale operation.
2. Innovative ways of deploying the workforce can have a number of different objectives. These include improving patient care; improving work satisfaction; making best use of existing skills; developing further skills; reducing junior doctor hours; making best use of existing resources or coping with reduced resources. Whatever the short-term objectives there will also be long-term consequences if such innovations are taken up on a large scale in the NHS.
3. When evaluating these consequences it is essential that all the associated costs are appropriately identified so those involved in planning for the future can consider the full implications of innovative patterns of skill-mix. It is also essential that consistent approaches are used in cost estimation so that like is compared with like when alternative courses of action are under consideration.
4. The report describes the results of a research project which was funded by the Department of Health as part of the Human Resources and Effectiveness Initiative. The aim of the research was to develop an approach to estimating health service staff costs in a consistent and comprehensive way which is appropriate to use when evaluating the cost consequences of innovative uses of staff resources.
5. The project has developed a piece of software which can be used to reflect the particular circumstances of the health service professional under consideration. The first volume of the report summarises the default estimated national unit costs provided in this software, their constituent elements and the sources of information used. The second volume describes the methodology and basis of the estimates.
6. The approach is based on the method used in the *Unit Costs of Health and Social Care* series of volumes: a bottom-up approach which identifies each element of cost and the appropriate allocation of these to the unit cost of staff time.
7. Chapter 1 in Volume II describes the overall methodology and improvements that have been made in the approach. These include:
 - the flexibility to include information about unsocial hours in salary estimation;
 - separation of indirect and direct overhead costs;
 - separation of personal and treatment capital costs; and
 - the inclusion of training costs.
8. Health services are critically dependent on the skills of individual professionals. These skills can be described as human capital and are like physical capital in that they are not used up in the process of producing the service.

9. The costs of acquiring these skills are the costs of specific courses, ongoing professional development and the initial investment in qualifications. The software allows users to incorporate specific courses where appropriate. Ongoing training has been treated as an annual cost, the basis for estimation depending on the type of professional. But the major improvement in the estimation of unit costs of health service professionals is the inclusion of the costs of investment in acquiring qualifications.
10. The components of this investment are:
 - the costs of tuition;
 - costs or benefits from clinical placement activities; and
 - living expenses where no salary is paid during training; or
 - replacement costs where staff are taken away from their posts in order to train.
11. Chapter 2 in Volume II describes the estimation of these costs for the pre-registration training of a variety of nurses, doctors, and professionals allied to medicine. Inevitably when covering such disparate groups, it has not been possible to provide detailed estimates of underlying costs. For the most part it has been necessary to use information about funding as a proxy for costs.
12. Before discounting to reflect the distribution of these costs over time the investment costs of pre-registration training are estimated as £35,669 for nurses, £197,659 for doctors and £41,201 for physiotherapists.
13. Estimates have also been made of the costs of post-registration training of community nurses and doctors (SHOs, registrars, GPs and consultants) on a similar basis. A nurse is estimated to cost £12,120 in order to become qualified with a community qualification. Before discounting to reflect the distribution of costs over time consultants are estimated to cost £98,427 in post-registration training.
14. In order to allocate these investment costs to the unit costs of health service professionals it is necessary to allocate them over the period during which the skills will be used. Chapter 3 in Volume II describes a methodology for estimating the expected working lives of health service professionals.
15. On the basis of analyses of the census and Labour Force Survey, the expected working life of nurses are estimated as between 19 and 22 years, and doctors between 26 years and 29 years. There was insufficient information to separately estimate the different professions allied to medicine. PAMs were estimated as working about 24 years in total.
16. A method was developed for allowing for the distribution of costs and returns on the investment (in terms of time spent working in related professional roles) over time.
17. In absolute terms the equivalent annual investment costs of training ranged from £4,520 for occupational therapists, through district nurses at £6,240, to £30,170 for consultants.
18. The impact on unit costs of staff of including investment costs was least on professions allied to medicine, although even for these groups costs rose by about a fifth. The lowest impact was for occupational therapists (16 per cent). The biggest impact among these professions was for speech and language therapists where unit costs are 19 per cent higher when investment costs of training are included.

19. For all types of nurse the impact was slightly higher, with unit costs rising by over 20 per cent when investment costs are included.
20. The most marked, and varied, impact was among doctors. Given the long-term investment required for consultants, it perhaps is not surprising that the costs including investment in training are 36 per cent higher than without this investment cost. But the most dramatic impact is on the costs of registrars. Because a high proportion of the investment required for a consultant is required for a registrar but pay is much lower the net effect of including investment costs is to increase unit costs by 60 per cent. If ongoing training costs are included costs rise by 66 per cent.
21. Clearly, the inclusion of investment costs of education and training has an important impact on the overall level of costs and the relative costs of health service professionals. This raises the question when these costs should be included and when they should be excluded from estimates of unit costs.
22. An important principle of economic cost estimation is that how costs are estimated depends on the reason the costs are being estimated. In turn this determines the perspective of the costing exercise: the costs to whom. For the most part these investment costs are borne by the wider NHS and individuals undertaking the training rather than trusts so those costing exercises that are concerned with narrowly defined costs to the provider organisation would not want to incorporate these investment costs.
23. The investment costs of education should always be included, however, when evaluating the cost-effectiveness of different approaches to using health service staff as it is important to include all the costs implicit in changing the professional mix. For the Human Resources and Effectiveness Initiative, it is clear that such costs should always be included in any cost-effectiveness evaluations. Evaluations of any techniques which change the way that staff are used (such as tele-medicine) should also include the investment cost of training. A reasonable rule of thumb when deciding whether investment costs of training should be included is to consider whether the issue under consideration has any potential implications in the long term for the workforce. If it has, then the investment required in training a skilled workforce should be incorporated.
24. The approach does allow us to make a reasonable estimate of the long-term investment costs of qualifying health service professionals. Clearly the levels of investment are such that including annuitised costs is essential if appropriate conclusions are to be drawn with respect to the cost-effectiveness of changing the patterns of use of professional expertise in the long term. The analysis also shows that the distribution of returns on investment in education has an important effect on estimated equivalent annual cost. This has implications for the appropriate measurement of costs both when considering innovative staff use and workforce planning.
25. The principal objective of the project was to provide a basis for estimating unit costs appropriate for the Human Resources and Effectiveness Initiative. By the very nature of this Initiative, patterns of working and using staff are likely to be atypical. The development of a piece of software allows the default values to provide a basis which can be varied to reflect the specific circumstances of the health service professional when estimating unit costs. Chapter 4 in Volume II describes the development of that software.
26. Clearly we do not yet know what the outcome of putting the software into practice will be. However, if it is successful and found to be practical there are a number of potential future developments. These include:

- adapting the software so it can be made available on the internet;
 - providing more flexibility for users to vary long-term investment training assumptions;
 - including the facility to reflect variations in turnover;
 - including treatment costs;
 - including more health service professionals;
 - including social care professionals;
 - allowing team costs to be estimated;
 - including facility-based services; and
 - putting together costs of care packages.
27. Even in the absence of such developments the approach provides a sound basis for estimating costs for a wide variety of health service professionals. Information is provided about vital long-term investment costs which are not likely to be available to those concerned with specific evaluations. The flexibility provided by the software means there are a wide variety of potential applications of the approach including evaluations of specific uses of health service professionals, exploring the cost implications of different patterns of working and changing the skill-mix in different settings.

1.a District nurse - unit costs

Commentary: An estimation of the costs of a G grade district nurse based on national average data where available. The default figures shown in the two accompanying tables reflect national costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London*	Non-London*	Notes
Annual	£34,946	£38,795	£34,418	Annual cost of employment, qualifications, overheads and travel (assuming 2,215 home visits per year) for the employee.
Weekly	£832	£924	£819	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£22	£25	£22	Total annual cost (excluding travel) divided by the number of hours worked per year.
Per hour with patient	£46	£51	£46	Hourly cost adjusted to reflect the proportion of time spent with patients.
Per hour in clinic	£35	£39	£35	Hourly cost adjusted to reflect the proportion of time in clinics.
Per hour of domiciliary visit	£49	£55	£48	Hourly cost adjusted to reflect the proportion of time in patients' homes.
Per 20 min. domiciliary visit	£16	£18	£16	Hourly cost of domiciliary visits combined with the length of a domiciliary visit and including the cost of travel.
Per care episode	£139	£154	£137	Hourly cost of time with patient multiplied by length of episode of care

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

1.b District nurse - cost elements

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£20,341 per year	National average salary for a district nurse, based on the December 1997 scale mid-point for a G grade district nurse. The sum does not include any lump sum allowances or pay enhancements for unsocial hours worked.
B. Salary on-costs	£2,368 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£6,115 per year	See Table 1.c.
D. Overheads	£4,271 per year	Comprises £2,000 for indirect overheads and 10 per cent of salary costs for direct revenue overheads.
E. Capital overheads	£1,850 per year	Based on the new build and land requirements of NHS facilities (Building Cost Information Service ¹ and Department of the Environment, Transport and the Regions ²), but adjusted to reflect shared use of both treatment and non-treatment space.
F. Travel	£1.03 per visit	Taken from Netten ³ and inflated using the retail price index. Validated by discussions with a group of NHS Trusts.
Working time	42 wks p.a., 37.5 hrs p.w.	Nursing and midwifery staffs negotiating council conditions of service and rates of pay. Includes 25 days annual leave and 10 statutory leave days.
Sickness leave	10 days p.a.	Assumed sickness leave.
Study leave	5 days p.a.	Assumed study/training days.
<i>Ratio of direct to indirect time spent on:</i> patient contacts clinic contacts home visits	1:1.08 1:0.58 1:1.21	Dunnell and Dobbs ⁴ estimated that the proportion of working time spent in different locations/activities was as follows: patient's own home 38 per cent; clinics 6 per cent; hospitals 2 per cent; other face-to-face settings 2 per cent; travel 24 per cent; non-clinical activity 28 per cent. Patient direct to indirect contact ratios allocate all non-contact time to all contact time. Clinic and home visit multipliers allocate travel time just to home visits.
Length of contact	20 mins	Per home visit. Based on discussions with a group of NHS Trusts.
London multiplier	1.11 x (A to D) 1.29 x E	Allows for the higher costs associated with London compared to the national average cost. ⁵ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to D) 0.99 x E	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

¹ Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.

² Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.

³ Netten, A. (1992) Some cost implications of Caring for People: interim report, Discussion Paper 809/4, Personal Social Services Research Unit, University of Kent at Canterbury.

⁴ Dunnell, K. & Dobbs, J. (1982) *Nurses Working in the Community*, OPCS, HMSO.

⁵ Department of Health (1997) *Labour Market Forces Factor*

1.c District nurse - training elements

Pre-registration	1997/98 value	Diploma of Higher Education in Community Psychiatric Mental Health Nursing
A. Tuition	£19,960	Total cost of tuition for the district nurse's pre-registration training. ⁶ This allows for an annual wastage rate of 4 per cent during the Common Foundation Programme and 6 per cent during the adult branch of training. ⁷
B. Living expenses	£20,315	The cost of a student nurse's living expenses whilst undergoing pre-registration training. ⁸
C. Clinical placement	-£6,280	The value of a clinical placement undertaken alongside a pre-registration course. The figure is shown as a negative number because it represents a benefit to the service provider offering the placement. ⁹
Total	£33,996	In order to allow for the distribution of training costs over time, the sub-totals and total figures shown here have all been discounted to the first year of training.
Post-registration	1997/98 value	Community Nursing Degree
D. Tuition	£2,823	The total cost of tuition for a community psychiatric nurse's post-registration degree training. ¹⁰
E. Replacement costs	£4,781	The estimated cost of replacing a community psychiatric nurse while a post-registration course is undertaken. The figure shown represents the time spent away from the workplace, for example in a classroom setting. This estimation is based on an assumption of one study day per week over a period of two academic years.
F. Clinical placement	£0	The value of a clinical placement undertaken alongside a post-registration course. This is zero since it is assumed that whilst training the nurse was employed by the service provider offering the placement and will have been producing care for which she/he received a salary.
Total	£7,604	The discounted figure assumes five years post-registration experience for consolidation of training before undertaking a community nursing degree.
Total investment cost of training	£41,600	This includes the nurse's pre-registration training and post-registration community nursing degree.
Total equivalent annual cost	£6,115	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 19 years. ¹¹ This expected working life estimation reflects the distribution of years worked over a 44 year period. It is assumed that 91.5 per cent of community psychiatric nurses hold a specialist community qualification, based on the proportion of G grade community nurses in the current workforce. A community degree has been chosen as nursing students complete pre-registration training with a diploma level qualification.

⁶ NHS Executive (1997) Financial Workforce Information Returns, 1997-8 Forecasts.

⁷ English National Board for Nursing, Midwifery and Health Visiting (1997) Annual Report 1996-7.

⁸ Callender, C. & Kempson, E. (1996) Student Finances, PSI: London. Inflated to 1997-8 value.

⁹ Lloyd-Jones, M. & Akehurst, R. (1996). *An Evaluation of Costs and Practices Relating to the Administration and Provision of Clinical Placements for Student Nurses and Midwives*. SCHARR: Sheffield. Inflated to 1997-8 value.

¹⁰ Average price derived from information supplied by a sample of educational institutions.

¹¹ Netten, A. & Knight, J. (1998) *Annuitising the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

**2.a Community
psychiatric nurse - unit costs**

Commentary: An estimation of the costs of a G grade community psychiatric nurse based on national average data where available. The default figures shown in the two accompanying tables reflect national average costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London *	Non- London*	Notes
Annual	£35,185	£39,060	£34,650	Annual cost of employment, qualifications, overheads and travel (assuming 2,215 visits per year) for the employee.
Weekly	£838	£930	£825	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£22	£25	£22	Total annual cost (excluding travel) divided by the number of hours worked per year.
Per hour with patient	£62	£69	£61	Hourly cost adjusted to reflect the proportion of time spent with patients.
Per hour in clinic	£49	£54	£48	Hourly cost adjusted to reflect the proportion of time in clinics.
Per hour of domiciliary visit	£68	£75	£67	Hourly cost adjusted to reflect the proportion of time in patients' homes.
Per 20 min. domiciliary visit	£23	£25	£22	Hourly cost of domiciliary visits combined with the length of a domiciliary visit and including travel costs.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

2.b Community psychiatric nurse - cost elements

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£20,774 per year	National average salary for a community psychiatric nurse, based on the December 1997 scale mid-point for a G grade community psychiatric nurse. The sum includes an element to reflect the proportion of staff who receive a London allowance. It does not include any lump sum allowances or pay enhancements for unsocial hours worked.
B. Salary on-costs	£2,417 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£5,824 per year	See Table 2.c
D. Overheads	£4,319 per year	Comprises £2,000 for indirect overheads and 10 per cent of salary costs for direct revenue overheads.
E. Capital overheads	£1,850 per year	Based on the new build and land requirements of NHS facilities (Building Cost Information Service ¹² and Department of the Environment, Transport and the Regions ¹³), but adjusted to reflect shared used of both treatment and non-treatment space.
F. Travel	£1.03 per visit	Taken from Netten ¹⁴ and inflated using the retail price index. Validated by discussions with a group of NHS Trusts.
Working time	42 wks p.a., 37.5 hrs p.w.	Nursing and midwifery staffs negotiating council conditions of service and rates of pay. Includes 25 days annual leave and 10 statutory leave days.
Sickness leave	10 days p.a.	Assumed sickness leave.
Study leave	5 days p.a.	Assumed study/training days.
Ratio of direct to indirect time spent on: patient contacts clinic contacts home visits	1:1.78 1:1.19 1:2.03	Dunnell and Dobbs ¹⁵ estimated that the proportion of working time spent in different locations/activities was as follows: patient's own home 25 per cent; clinics 3 per cent; other face-to-face settings 8 per cent; travel 21 per cent; non-clinical activity 43 per cent. Patient direct to indirect contact ratios allocate all non-contact time to all contact time. Clinic and home visit multipliers allocate travel time just to home visits.
Length of contact	20 mins	Per home visit. Based on discussions with a group of NHS Trusts.
London multiplier	1.11 x (A to D) 1.29 x E	Allows for the higher costs associated with London compared to the national average cost. ¹⁶ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to D) 0.99 x E	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

¹² Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.

¹³ Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.

¹⁴ Netten, A. (1992) Some cost implications of Caring for People: interim report, Discussion Paper 809/4, Personal Social Services Research Unit, University of Kent at Canterbury.

¹⁵ Dunnell, K. & Dobbs, J. (1982) *Nurses Working in the Community*, OPCS, HMSO.

¹⁶ Department of Health (1997) *Labour Market Forces Factor*

2.c Community psychiatric nurse - training elements

Pre-registration	1997/98 value	Diploma of Higher Education in Adult Nursing
A. Tuition	£20,044	Total cost of tuition for the nurse's pre-registration training. ¹⁷ This allows for an annual wastage rate of 4 per cent during the Common Foundation Programme and 5 per cent during the adult branch of training. ¹⁸
B. Living expenses	£20,315	The estimated cost of a student nurse's living expenses whilst undergoing pre-registration training. ¹⁹
C. Clinical placement	-£5,990	The value of a clinical placement undertaken alongside a pre-registration course. The figure is shown as a negative number because it represents a benefit to the service provider offering the placement. ²⁰
Total	£34,369	In order to allow for the distribution of training costs over time, the sub-totals and total figures shown here have all been discounted to the first year of training.
Post-registration	1997/98 value	Community Nursing Degree
D. Tuition	£2,823	The total cost of tuition for a community psychiatric nurse's post-registration degree training. ²¹
E. Replacement costs	£4,781	The estimated cost of replacing a community psychiatric nurse while a post-registration course is undertaken. The figure shown represents the time spent away from the workplace, for example in a classroom setting. This estimation is based on an assumption of one study day per week over a period of two academic years.
F. Clinical placement	£0	The value of a clinical placement undertaken alongside a post-registration course. This is zero since it is assumed that whilst training the nurse was employed by the service provider offering the placement and will have been producing care for which he/she received a salary.
Total	£7,604	The discounted figure assumes five years post-registration experience for consolidation of training before undertaking a community nursing degree.
Total investment cost of training	£41,974	This includes the nurse's pre-registration training and post-registration community nursing degree.
Total equivalent annual cost	£5,824	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 19 years. ²² This expected working life estimation reflects the distribution of years worked over a 44 year period. It is assumed that 91.5 per cent of community psychiatric nurses hold a specialist community qualification, based on the proportion of G grade community nurses in the current workforce. A community degree has been chosen as nursing students complete pre-registration training with a diploma level qualification.

¹⁷ NHS Executive (1997) Financial Workforce Information Returns, 1997-8 Forecasts.

¹⁸ English National Board for Nursing, Midwifery and Health Visiting (1997) Annual Report 1996-7.

¹⁹ Callender, C. & Kempson, E. (1996) Student Finances, PSI: London. Inflated to 1997-8 value.

²⁰ Lloyd-Jones, M. & Akehurst, R. (1996). *An Evaluation of Costs and Practices Relating to the Administration and Provision of Clinical Placements for Student Nurses and Midwives*. SCHARR: Sheffield. Inflated to 1997-8 value.

²¹ Average price derived from information supplied by a sample of educational institutions.

²² Netten, A. & Knight, J. (1998) *Annuitising the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

3.a Health visitor - unit costs

Commentary: An estimation of the costs of a G grade health visitor based on national average data where possible. The default figures shown in the two accompanying tables reflect national costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London *	Non-London*	Notes
Annual	£34,946	£38,795	£34,418	Annual cost of employment, qualifications, overheads and travel (assuming 2,215 home visits per year) for the employee.
Weekly	£832	£924	£819	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£22	£25	£22	Total annual cost (excluding travel) divided by the number of hours worked per year.
Per hour with patient	£63	£70	£62	Hourly cost adjusted to reflect the proportion of time spent with patients.
Per hour in clinic	£53	£59	£52	Hourly cost adjusted to reflect the proportion of time in clinics.
Per hour of domiciliary visit	£77	£85	£76	Hourly cost adjusted to reflect the proportion of time in patients' homes.
Per 20 min. domiciliary visit	£26	£28	£25	Hourly cost of domiciliary visits combined with the length of a domiciliary visit and including travel costs.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

3.b Health visitor - cost elements

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£20,341 per year	National average salary for a health visitor, based on the December 1997 scale mid-point for a G grade nurse. The sum includes an element to reflect the proportion of staff who receive a London allowance. It does not include any lump sum allowances or pay enhancements for unsocial hours worked.
B. Salary on-costs	£2,368 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£6,115 per year	See Table 3.c
D. Overheads	£4,271 per year	Comprises £2,000 for indirect overheads and 10 per cent of salary costs for direct revenue overheads.
E. Capital overheads	£1,850 per year	Based on the new build and land requirements of NHS facilities (Building Cost Information Service ²³ and Department of the Environment, Transport and the Regions ²⁴), but adjusted to reflect shared use of both treatment and non-treatment space.
F. Travel	£1.03 per visit	Taken from Netten ²⁵ and inflated using the retail price index. Validated by discussions with a group of NHS Trusts.
Working time	42 wks p.a., 37.5 hrs p.w.	Nursing and midwifery staffs negotiating council conditions of service and rates of pay. Includes 25 days annual leave and 10 statutory leave days.
Sickness leave	10 days p.a.	Assumed sickness leave.
Study leave	5 days p.a.	Assumed study/training days.
<i>Ratio of direct to indirect time spent on:</i> patient contacts clinic contacts home visits	 1:1.86 1:1.40 1:2.47	Dunnell and Dobbs ²⁶ estimated that the proportion of working time spent in different locations/activities was as follows: patient's own home 15 per cent; clinics 12 per cent; other face-to-face settings 8 per cent; travel 16 per cent; non-clinical activity 49 per cent. Patient direct to indirect contact ratios allocate all non-contact time to all contact time. Clinic and home visit multipliers allocate travel time just to home visits.
Length of contact	20 mins	Per home visit. Based on discussions with a group of NHS Trusts.
London multiplier	1.11 x (A to D) 1.29 x E	Allows for the higher costs associated with London compared to the national average cost. ²⁷ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to D) 0.99 x E	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

²³ Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.

²⁴ Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.

²⁵ Netten, A. (1992) Some cost implications of Caring for People: interim report, Discussion Paper 809/4, Personal Social Services Research Unit, University of Kent at Canterbury.

²⁶ Dunnell, K. & Dobbs, J. (1982) *Nurses Working in the Community*, OPCS, HMSO.

²⁷ Department of Health (1997) *Labour Market Forces Factor*

3.c Health visitor - training elements

Pre-registration	1997/98 value	Diploma of Higher Education in Adult Nursing
A. Tuition	£19,960	Total cost of tuition for the health visitor's pre-registration training. ²⁸ This allows for an annual wastage rate of 4 per cent during the Common Foundation Programme and 5 per cent during the adult branch of training. ²⁹
B. Living expenses	£20,315	The cost of a student nurse's living expenses whilst undergoing pre-registration training. ³⁰
C. Clinical placement	-£6,280	The value of a clinical placement undertaken alongside a pre-registration course. The figure is shown as a negative number because it represents a benefit to the service provider offering the placement. ³¹
Total	£33,996	In order to allow for the distribution of training costs over time, the sub-totals and total figures shown here have all been discounted to the first year of training.
Post-registration	1997/98 value	Community Nursing Degree
D. Tuition	£2,823	The total cost of tuition for a health visitor's post-registration degree training. ³²
E. Replacement costs	£4,781	The estimated cost of replacing a health visitor while a post-registration course is undertaken. The figure shown represents the time spent away from the workplace, for example in a classroom setting. This estimation is based on an assumption of one study day per week over a period of two academic years.
F. Clinical placement	£0	The value of a clinical placement undertaken alongside a post-registration course. This is zero since it is assumed that whilst training the nurse was employed by the service provider offering the placement and will have been producing care for which he/she received a salary.
Total	£7,604	The discounted figure assumes five years post-registration experience for consolidation of training before undertaking a community nursing degree.
Total investment cost of training	£41,600	This includes the health visitor's pre-registration training and post-registration community nursing degree.
Total equivalent annual cost	£6,115	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 19 years. ³³ This expected working life estimation reflects the distribution of years worked over a 44 year period. It is assumed that 91.5 per cent of health visitors hold a specialist community qualification, based on the proportion of G grade community nurses in the current workforce. A community degree has been chosen as nursing students complete pre-registration training with a diploma level qualification.

²⁸ NHS Executive (1997) Financial Workforce Information Returns, 1997-8 Forecasts.

²⁹ English National Board for Nursing, Midwifery and Health Visiting (1997) Annual Report 1996-7.

³⁰ Callender, C. & Kempson, E. (1996) Student Finances, PSI: London. Inflated to 1997-8 value.

³¹ Lloyd-Jones, M. & Akehurst, R. (1996). *An Evaluation of Costs and Practices Relating to the Administration and Provision of Clinical Placements for Student Nurses and Midwives*. SCHARR: Sheffield. Inflated to 1997-8 value.

³² Average price derived from information supplied by a sample of educational institutions.

³³ Netten, A. & Knight, J. (1998) *Annuitying the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

**4.a Practice nurse -
unit costs**

Commentary: An estimation of the costs of a practice nurse, based on national average data where available. The default figures shown in the two accompanying tables reflect national costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London*	Non-London*	Notes
Annual	£35,744	£39,939	£35,209	Annual cost of employment, qualifications, overheads and travel (assuming 500 home visits per year) for the employee.
Weekly	£851	£951	£838	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£23	£26	£23	Total annual cost (excluding travel) divided by the number of hours worked per year.
Per hour with patient	£27	£30	£27	Hourly cost adjusted to reflect the proportion of time spent with patients.
Per hour in surgery	£26	£29	£25	Hourly cost adjusted to reflect the proportion of time in clinics.
Per hour of domiciliary visit	£33	£37	£33	Hourly cost adjusted to reflect the proportion of time in patients' homes.
Per 20 min. domiciliary visit	£11	£12	£11	Hourly cost of domiciliary visits combined with the length of a domiciliary visit and including travel costs.
Per consultation (98 per week)	£8.80	£9.83	£8.67	Total weekly cost divided by the number of consultations per week
Per procedure (109 per week)	£7.91	£8.84	£7.79	Total weekly cost divided by the number of procedures per week

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

4.b Practice nurse - cost elements

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£20,341 per year	National average salary for a practice nurse, based on the December 1997 scale mid-point for a G grade nurse. The sum includes an element to reflect the proportion of staff who receive a London allowance. It does not include any lump sum allowances or pay enhancements for unsocial hours worked.
B. Salary on-costs	£2,368 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£5,741 per year	See Table 4.c
D. Overheads	£4,271 per year	Comprises £2,000 for indirect overheads and 10 per cent of salary costs for direct revenue overheads.
E. Capital overheads	£3,023 per year	Based on the new build and land requirements of NHS facilities (Building Cost Information Service ³⁴ and Department of the Environment, Transport and the Regions ³⁵), but adjusted to reflect shared used of both treatment and non-treatment space.
F. Travel	£0.50 per visit	Taken from Atkin et al. ³⁶ and inflated using the retail price index. Validated by discussions with a group of NHS Trusts.
Working time	42 wks p.a., 37 hrs p.w.	Nursing and midwifery staffs negotiating council conditions of service and rates of pay. Includes 25 days annual leave and 10 statutory leave days.
Sickness leave	10 days p.a.	Assumed sickness leave.
Study leave	5 days p.a.	Assumed study/training days.
Ratio of direct to indirect time spent on: patient contacts clinic contacts home visits	1:0.18 1:0.12 1:0.45	The proportion of working time spent in different locations/activities is as follows: patient's own home 15 per cent; clinics/surgeries 60 per cent; hospital 5 per cent; other face-to-face settings 5 per cent; travel 5 per cent; non-clinical activity 10 per cent. Patient direct to indirect contact ratios allocate all non-contact time to all contact time. Clinic and home visit multipliers allocate travel time just to home visits. Information derived from personal communication with health service professionals.
Length of contact	20 mins	Per home visit. Based on discussions with a group of NHS Trusts.
Client contacts	98 p.w. 109 p.w.	No. of consultations per week. No. of procedures per week. ³⁷
London multiplier	1.11 x (A to D) 1.28 x E	Allows for the higher costs associated with London compared to the national average cost. ³⁸ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to D) 0.99 x E	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

³⁴ Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.

³⁵ Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.

³⁶ Atkin, K. & Hirst, M. (1994) Costing Practice Nurses: Implications for Primary Health Care, Social Policy Research Unit, University of York.

³⁷ Jeffreys, L.A., Clark, A. & Koperski, M. (1995) Practice nurses' workload and consultation patterns, *British Journal of General Practice*, 45, August, 415-18.

³⁸ Department of Health (1997) *Labour Market Forces Factor*

**4.c Practice nurse -
training elements**

Pre-registration	1997/98 value	Diploma of Higher Education in Adult Nursing
A. Tuition	£19,960	Total cost of tuition for the practice nurse's pre-registration training. ³⁹ This allows for an annual wastage rate of 4 per cent during the Common Foundation Programme and 5 per cent during the adult branch of training. ⁴⁰
B. Living expenses	£20,315	The estimated cost of a student nurse's living expenses whilst undergoing pre-registration training. ⁴¹
C. Clinical placement	-£6,280	The value of a clinical placement undertaken alongside a pre-registration course. The figure is shown as a negative number because it represents a benefit to the service provider offering the placement. ⁴²
Total	£33,996	In order to allow for the distribution of training costs over time, the sub-totals and total figures shown here have all been discounted to the first year of training.
Post-registration	1997/98 value	Community Nursing Degree
D. Tuition	£2,823	The total cost of tuition for a practice nurse's post-registration degree training. ⁴³
E. Replacement costs	£4,781	The estimated cost of replacing a district nurse while a post-registration course is undertaken. The figure shown represents the time spent away from the workplace, for example in a classroom setting. This estimation is based on an assumption of one study day per week over a period of two academic years.
F. Clinical placement	£0	The value of a clinical placement undertaken alongside a post-registration course. This is zero since it is assumed that whilst training the nurse was employed by the service provider offering the placement and will have been producing care for which he/she received a salary.
Total	£7,604	The discounted figure assumes five years post-registration experience for consolidation of training before undertaking a community nursing degree.
Total investment cost of training	£41,600	This includes the nurse's pre-registration training and post-registration community nursing degree.
Total equivalent annual cost	£5,741	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 19 years. ⁴⁴ This expected working life estimation reflects the distribution of years worked over a 44 year period. It is assumed that 60 per cent of practice nurses hold a specialist practice nurse qualification. A community degree has been chosen as nursing students complete pre-registration training with a diploma level qualification.

³⁹ NHS Executive (1997) Financial Workforce Information Returns, 1997-8 Forecasts.⁴⁰ English National Board for Nursing, Midwifery and Health Visiting (1997) Annual Report 1996-7.⁴¹ Callender, C. & Kempson, E. (1996) Student Finances, PSI: London. Inflated to 1997-8 value.⁴² Lloyd-Jones, M. & Akehurst, R. (1996). *An Evaluation of Costs and Practices Relating to the Administration and Provision of Clinical Placements for Student Nurses and Midwives*. SCHARR: Sheffield. Inflated to 1997-8 value.⁴³ Average price derived from information supplied by a sample of educational institutions.⁴⁴ Netten, A. & Knight, J. (1998) *Annuitying the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

5.a Community auxiliary nurse - unit costs

Commentary: An estimation of the costs of a B grade community auxiliary nurse, based on national average data where available. The default figures shown in the two accompanying tables reflect national costs. No investment training has been included.

Unit cost 1997/98	National	London*	Non-London*	Notes
Annual	£14,533	£17,013	£14,867	Annual cost of employment, overheads and travel (assuming 2,500 home visits per year) for the employee.
Weekly	£330	£387	£338	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£8.81	£10.31	£9.01	Total annual cost (excluding travel) divided by the number of hours worked per year.
Per hour with patient	£14	£17	£15	Hourly cost adjusted to reflect the proportion of time spent with patients.
Per hour in clinic	£11	£13	£11	Hourly cost adjusted to reflect the proportion of time in clinics.
Per hour of domiciliary visit	£14	£17	£15	Hourly cost adjusted to reflect the proportion of time in patients' homes.
Per 20 min. domiciliary visit	£4.80	£5.62	£4.91	Hourly cost of domiciliary visits combined with the length of a domiciliary visit and including travel costs.
Per clinic contact	£3.74	£4.38	£3.83	Hourly cost of time spent in clinics combined with the length of a clinic contact.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

5.b Community auxiliary nurse - cost elements

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£10,300 per year	National average salary for an auxiliary nurse, based on the December 1997 scale mid-point for a B grade nurse. The sum includes an element to reflect the proportion of staff who receive a London allowance. It does not include any lump sum allowances or pay enhancements for unsocial hours worked.
B. Salary on-costs	£921 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£0	No qualifications assumed.
D. Overheads	£2,561 per year	Comprises £2,000 for indirect overheads and 5 per cent of salary costs for direct revenue overheads.
E. Capital overheads	£751 per year	Based on the new build and land requirements of NHS facilities (Building Cost Information Service ⁴⁵ and Department of the Environment, Transport and the Regions ⁴⁶), but adjusted to reflect shared use of both treatment and non-treatment space. It is assumed that an auxiliary nurse uses one-sixth of the space used by a district nurse.
F. Travel	£1.03 per visit	Taken from Netten ⁴⁷ and inflated using the retail price index. Validated by discussions with a group of NHS Trusts.
Working time	44 wks p.a., 37.5 hrs p.w.	Nursing and midwifery staffs negotiating council conditions of service and rates of pay. Includes 20 days annual leave and 10 statutory leave days.
Sickness leave	10 days p.a.	Assumed sickness leave.
Study leave	0 days p.a.	No study leave assumed.
Ratio of direct to indirect time spent on: patient contacts clinic contacts home visits	1:0.61 1:0.27 1:0.64	Dunnell and Dobbs ⁴⁸ estimated that the proportion of working time spent in different locations/activities was as follows: patient's own home 58 per cent; clinics 2 per cent; other face-to-face settings 2 per cent; travel 21 per cent; non-clinical activity 17 per cent. Patient direct to indirect contact ratios allocate all non-contact time to all contact time. Clinic and home visit multipliers allocate travel time just to home visits.
Length of contact	20 mins	Per home visit. Based on discussions with a group of NHS Trusts.
London multiplier	1.11 x (A to D) 1.28 x E	Allows for the higher costs associated with London compared to the national average cost. ⁴⁹ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to D) 0.99 x E	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

⁴⁵ Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.

⁴⁶ Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.

⁴⁷ Netten, A. (1992) Some cost implications of Caring for People: interim report, Discussion Paper 809/4, Personal Social Services Research Unit, University of Kent at Canterbury.

⁴⁸ Dunnell, K. & Dobbs, J. (1982) *Nurses Working in the Community*, OPCS, HMSO.

⁴⁹ Department of Health (1997) *Labour Market Forces Factor*

6.a Hospital nurse, staff, day ward - unit costs

Commentary: An estimation of the costs of a grade E hospital staff nurse working on a day ward. Costs are based on national average data where available. The default figures shown in the two accompanying tables reflect national costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London *	Non- London *	Notes
Annual	£24,984	£27,109	£24,333	Annual cost of employment, qualifications and overheads for the employee.
Weekly	£595	£645	£579	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£16	£17	£15	Total annual cost divided by the number of hours worked per year.
Per hour with patient	£29	£31	£28	Hourly cost adjusted to reflect the proportion of time spent with patients.
Per shift	£119	£129	£116	Total weekly cost divided by the number of shifts per week.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

**6.b Hospital nurse,
staff, day ward - cost elements**

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£15,428 per year	National average salary for a staff nurse, based on the December 1997 scale mid-point for an E grade nurse. The sum includes an element to reflect the proportion of staff who receive a London allowance. It does not include any lump sum allowances and it is assumed that no unsocial hours are worked.
B. Salary on-costs	£1,818 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£4,735 per year	See Table 6.c
D. Overheads	£2,000 per year	Comprises £2,000 for indirect overheads. No allowance has been made for direct overheads because it is not possible to separate these from the cost of treatment.
E. Capital overheads	£1,003 per year	Based on the new build and land requirements of NHS facilities (Building Cost Information Service ⁵⁰ and Department of the Environment, Transport and the Regions ⁵¹). Adjustments have been made to reflect shared use of office space for administration and recreational and changing facilities. Treatment space has not been included.
Working time	42 wks p.a., 37.5 hrs p.w.	Nursing and midwifery staffs negotiating council conditions of service and rates of pay. Includes 25 days annual leave and 10 statutory leave days.
Sickness leave	10 days p.a.	Assumed sickness leave.
Study leave	5 days p.a.	Assumed study/training days.
Ratio of direct to indirect time spent on: face-to-face contacts	1:0.82	Assuming 55 per cent of time spent on face-to-face contact, 25 per cent on other clinical activity, and 20 per cent on non-clinical activity. Information derived from consultation with NHS Trusts.
London multiplier	1.11 x (A to D) 1.26 x E	Allows for the higher costs associated with London compared to the national average cost. ⁵² Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to D) 0.99 x E	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

⁵⁰ Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.

⁵¹ Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.

⁵² Department of Health (1997) *Labour Market Forces Factor*

6.c Hospital nurse, staff, day ward - training elements

Pre-registration	1997/98 value	Diploma of Higher Education in Adult Nursing
A. Tuition	£19,960	Total cost of tuition for the staff nurse's pre-registration training. ⁵³ This allows for an annual wastage rate of 4 per cent during the Common Foundation Programme and 5 per cent during the adult branch of training. ⁵⁴
B. Living expenses	£20,315	The estimated cost of a student nurse's living expenses whilst undergoing pre-registration training. ⁵⁵
C. Clinical placement	-£6,280	The value of a clinical placement undertaken alongside a pre-registration course. The figure is shown as a negative number because it represents a benefit to the service provider offering the placement. ⁵⁶
Total investment cost of training	£33,996	This includes the nurse's pre-registration training. In order to allow for the distribution of training costs over time, the sub-totals and total figures shown here have all been discounted to the first year of training.
Total equivalent annual cost	£4,735	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 19 years. ⁵⁷ This expected working life estimation reflects the distribution of years worked over a 44 year period.

⁵³ NHS Executive (1997) Financial Workforce Information Returns, 1997-8 Forecasts.

⁵⁴ English National Board for Nursing, Midwifery and Health Visiting (1997) Annual Report 1996-7.

⁵⁵ Callender, C. & Kempson, E. (1996) Student Finances, PSI: London. Inflated to 1997-8 value.

⁵⁶ Lloyd-Jones, M. & Akehurst, R. (1996). *An Evaluation of Costs and Practices Relating to the Administration and Provision of Clinical Placements for Student Nurses and Midwives*. ScHARR: Sheffield. Inflated to 1997-8 value.

⁵⁷ Netten, A. & Knight, J. (1998) *Annuitising the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

**7.a Hospital nurse,
manager, day ward - unit costs**

Commentary: An estimation of the costs of a ward manager (formerly referred to as a sister or charge nurse) in charge of a day ward. Costs are based on national average data where available. The default figures shown in the two accompanying tables reflect national costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London *	Non- London *	Notes
Annual	£31,312	£34,243	£30,554	Annual cost of employment, qualifications and overheads for the employee.
Weekly	£746	£815	£727	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£20	£22	£19	Total annual cost divided by the number of hours worked per year.
Per hour with patient	£44	£48	£43	Hourly cost adjusted to reflect the proportion of time spent with patients.
Per shift	£149	£163	£145	Total weekly cost divided by the number of shifts per week.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

7.b Hospital nurse, manager, day ward - cost elements

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£20,341 per year	National average salary for a staff nurse, based on the December 1997 scale mid-point for an G grade nurse. The sum includes an element to reflect the proportion of staff who receive a London allowance. It does not include any lump sum allowances and it is assumed that no unsocial hours are worked.
B. Salary on-costs	£2,368 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£4,735 per year	See Table 7.c
D. Overheads	£2,000 per year	Comprises £2,000 for indirect overheads. No allowance has been made for direct overheads because it is not possible to separate these from the cost of treatment.
E. Capital overheads	£1,867 per year	Based on the new build and land requirements of NHS facilities (Building Cost Information Service ⁵⁸ and Department of the Environment, Transport and the Regions ⁵⁹). Adjustments have been made to reflect shared use of office space for administration and recreational and changing facilities. Treatment space has not been included.
Working time	42 wks p.a., 37.5 hrs p.w.	Nursing and midwifery staffs negotiating council conditions of service and rates of pay. Includes 25 days annual leave and 10 statutory leave days.
Sickness leave	10 days p.a.	Assumed sickness leave.
Study leave	5 days p.a.	Assumed study/training days.
<i>Ratio of direct to indirect time spent on: face-to-face contacts</i>	1:1.22	Assuming 45 per cent of time spent on face-to-face contact, 35 per cent on other clinical activity, and 20 per cent on non-clinical activity. Information derived from consultation with NHS Trusts.
London multiplier	1.11 x (A to D) 1.26 x E	Allows for the higher costs associated with London compared to the national average cost. ⁶⁰ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to D) 0.99 x E	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

⁵⁸ Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.

⁵⁹ Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.

⁶⁰ Department of Health (1997) *Labour Market Forces Factor*

**7.c Hospital nurse,
manager, day ward - training elements**

Pre-registration	1997/98 value	Diploma of Higher Education in Adult Nursing
A. Tuition	£19,960	Total cost of tuition for the nurse's pre-registration training. ⁶¹ This allows for an annual wastage rate of 4 per cent during the Common Foundation Programme and 5 per cent during the adult branch of training. ⁶²
B. Living expenses	£20,315	The estimated cost of a student nurse's living expenses whilst undergoing pre-registration training. ⁶³
C. Clinical placement	-£6,280	The value of a clinical placement undertaken alongside a pre-registration course. The figure is shown as a negative number because it represents a benefit to the service provider offering the placement. ⁶⁴
Total investment cost of training	£33,996	This includes the nurse's pre-registration training. In order to allow for the distribution of training costs over time, the sub-totals and total figures shown here have all been discounted to the first year of training.
Total equivalent annual cost	£4,735	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 19 years. ⁶⁵ This expected working life estimation reflects the distribution of years worked over a 44 year period.

⁶¹ NHS Executive (1997) Financial Workforce Information Returns, 1997-8 Forecasts.

⁶² English National Board for Nursing, Midwifery and Health Visiting (1997) Annual Report 1996-7.

⁶³ Callender, C. & Kempson, E. (1996) Student Finances, PSI: London. Inflated to 1997-8 value.

⁶⁴ Lloyd-Jones, M. & Akehurst, R. (1996). *An Evaluation of Costs and Practices Relating to the Administration and Provision of Clinical Placements for Student Nurses and Midwives*. ScHARR: Sheffield. Inflated to 1997-8 value.

⁶⁵ Netten, A. & Knight, J. (1998) *Annuitising the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

8.a Hospital nurse, staff, 24-hour ward - unit costs

Commentary: An estimation of the costs of a grade E hospital staff nurse working on a 24-hour ward. An assumption of unsocial hours worked has been made based on the staffing level required to provide an adequate level of coverage over the 24 hour period during which care is provided. Costs are based on national average data where available. The default figures shown in the two accompanying tables reflect national costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London *	Non- London *	Notes
Annual	£27,506	£29,909	£24,333	Annual cost of employment, qualifications and overheads for the employee.
Weekly	£655	£712	£579	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£17	£19	£15	Total annual cost divided by the number of hours worked per year.
Per hour with patient	£35	£38	£31	Hourly cost adjusted to reflect the proportion of time spent with patients.
Per shift	£131	£142	£116	Total weekly cost divided by the number of shifts per week.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

**8.b Hospital nurse,
staff, 24-hour ward - cost elements**

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£17,696 per year	National average salary for a staff nurse, based on the December 1997 scale mid-point for an E grade nurse. The sum includes an element to reflect the proportion of staff who receive a London allowance. It assumes that the hours include working 13.2 hours a week evenings and Saturdays at 1.3 of basic rate, and 4.8 hours a week on Sundays at 1.6 of basic rate.
B. Salary on-costs	£2,072 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£4,735 per year	See Table 8.c
D. Overheads	£2,000 per year	Comprises £2,000 for indirect overheads. No allowance has been made for direct overheads because it is not possible to separate these from the cost of treatment.
E. Capital overheads	£1,003 per year	Based on the new build and land requirements of NHS facilities (Building Cost Information Service ⁶⁶ and Department of the Environment, Transport and the Regions ⁶⁷). Adjustments have been made to reflect shared use of office space for administration and recreational and changing facilities. Treatment space has not been included.
Working time	42 wks p.a., 37.5 hrs p.w.	Nursing and midwifery staffs negotiating council conditions of service and rates of pay. Includes 25 days annual leave and 10 statutory leave days.
Sickness leave	10 days p.a.	Assumed sickness leave.
Study leave	5 days p.a.	Assumed study/training days.
Ratio of direct to indirect time spent on: face-to-face contacts	1:1.00	Assuming 50 per cent of time spent on face-to-face contact, 40 per cent on other clinical activity, and 10 per cent on non-clinical activity. Information derived from consultation with NHS Trusts.
London multiplier	1.11 x (A to D) 1.26 x E	Allows for the higher costs associated with London compared to the national average cost. ⁶⁸ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to D) 0.99 x E	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

⁶⁶ Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.⁶⁷ Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.⁶⁸ Department of Health (1997) *Labour Market Forces Factor*

8.c Hospital nurse, staff, 24-hour ward - training elements

Pre-registration	1997/98 value	Diploma of Higher Education in Adult Nursing
A. Tuition	£19,960	Total cost of tuition for the nurse's pre-registration training. ⁶⁹ This allows for an annual wastage rate of 4 per cent during the Common Foundation Programme and 5 per cent during the adult branch of training. ⁷⁰
B. Living expenses	£20,315	The estimated cost of a student nurse's living expenses whilst undergoing pre-registration training. ⁷¹
C. Clinical placement	-£6,280	The value of a clinical placement undertaken alongside a pre-registration course. The figure is shown as a negative number because it represents a benefit to the service provider offering the placement. ⁷²
Total investment cost of training	£33,996	This includes the nurse's pre-registration training. In order to allow for the distribution of training costs over time, the sub-totals and total figures shown here have all been discounted to the first year of training.
Total equivalent annual cost	£4,735	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 19 years. ⁷³ This expected working life estimation reflects the distribution of years worked over a 44 year period.

⁶⁹ NHS Executive (1997) Financial Workforce Information Returns, 1997-8 Forecasts.

⁷⁰ English National Board for Nursing, Midwifery and Health Visiting (1997) Annual Report 1996-7.

⁷¹ Callender, C. & Kempson, E. (1996) Student Finances, PSI: London. Inflated to 1997-8 value.

⁷² Lloyd-Jones, M. & Akehurst, R. (1996). *An Evaluation of Costs and Practices Relating to the Administration and Provision of Clinical Placements for Student Nurses and Midwives*. ScHARR: Sheffield. Inflated to 1997-8 value.

⁷³ Netten, A. & Knight, J. (1998) *Annuitising the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

**9.a Hospital nurse,
manager, 24-hour ward - unit costs**

Commentary: An estimation of the costs of a ward manager (formerly referred to as a sister or charge nurse) in charge of a 24-hour ward. An assumption of unsocial hours worked has been made based on the staffing level required to provide an adequate level of coverage over the 24 hour period during which care is provided. Costs are based on national average data where available. Costs are based on national average data where available. The default figures shown in the two accompanying tables reflect national costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London *	Non- London *	Notes
Annual	£34,166	£37,449	£30,554	Annual cost of employment, qualifications and overheads for the employee.
Weekly	£813	£892	£727	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£22	£24	£19	Total annual cost divided by the number of hours worked per year.
Per hour with patient	£48	£53	£43	Hourly cost adjusted to reflect the proportion of time spent with patients.
Per shift	£163	£178	£145	Total weekly cost divided by the number of shifts per week.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

9.b Hospital nurse, manager, 24-hour ward - cost elements

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£22,908 per year	National average salary for a staff nurse, based on the December 1997 scale mid-point for an G grade nurse. The sum includes an element to reflect the proportion of staff who receive a London allowance. It assumes that the hours include working 13.2 hours a week evening and Saturdays at 1.3 of basic rate, and 4.8 hours a week on Sundays at 1.6 of basic rate.
B. Salary on-costs	£2,656 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£4,735 per year	See Table 9.c
D. Overheads	£2,000 per year	Comprises £2,000 for indirect overheads. No allowance has been made for direct overheads because it is not possible to separate these from the cost of treatment.
E. Capital overheads	£1,867 per year	Based on the new build and land requirements of NHS facilities (Building Cost Information Service ⁷⁴ and Department of the Environment, Transport and the Regions ⁷⁵). Adjustments have been made to reflect shared used of office space for administration and recreational and changing facilities. Treatment space has not been included.
Working time	42 wks p.a., 37.5 hrs p.w.	Nursing and midwifery staffs negotiating council conditions of service and rates of pay. Includes 25 days annual leave and 10 statutory leave days.
Sickness leave	10 days p.a.	Assumed sickness leave.
Study leave	5 days p.a.	Assumed study/training days.
<i>Ratio of direct to indirect time spent on:</i> face-to-face contacts	1:1.22	Assuming 45 per cent of time spent on face-to-face contact, 35 per cent on other clinical activity, and 20 per cent on non-clinical activity. Information derived from consultation with NHS Trusts.
London multiplier	1.11 x (A to D) 1.26 x E	Allows for the higher costs associated with London compared to the national average cost. ⁷⁶ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to D) 0.99 x E	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

⁷⁴ Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.

⁷⁵ Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.

⁷⁶ Department of Health (1997) *Labour Market Forces Factor*

**9.c Hospital nurse,
manager, 24-hour ward - training elements**

Pre-registration	1997/98 value	Diploma of Higher Education in Adult Nursing
A. Tuition	£19,960	Total cost of tuition for the nurse's pre-registration training. ⁷⁷ This allows for an annual wastage rate of 4 per cent during the Common Foundation Programme and 5 per cent during the adult branch of training. ⁷⁸
B. Living expenses	£20,315	The estimated cost of a student nurse's living expenses whilst undergoing pre-registration training. ⁷⁹
C. Clinical placement	-£6,280	The value of a clinical placement undertaken alongside a pre-registration course. The figure is shown as a negative number because it represents a benefit to the service provider offering the placement. ⁸⁰
Total investment cost of training	£33,996	This includes the nurse's pre-registration training. In order to allow for the distribution of training costs over time, the sub-totals and total figures shown here have all been discounted to the first year of training.
Total equivalent annual cost	£4,735	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 19 years. ⁸¹ This expected working life estimation reflects the distribution of years worked over a 44 year period.

⁷⁷ NHS Executive (1997) Financial Workforce Information Returns, 1997-8 Forecasts.

⁷⁸ English National Board for Nursing, Midwifery and Health Visiting (1997) Annual Report 1996-7.

⁷⁹ Callender, C. & Kempson, E. (1996) Student Finances, PSI: London. Inflated to 1997-8 value.

⁸⁰ Lloyd-Jones, M. & Akehurst, R. (1996). *An Evaluation of Costs and Practices Relating to the Administration and Provision of Clinical Placements for Student Nurses and Midwives*. ScHARR: Sheffield. Inflated to 1997-8 value.

⁸¹ Netten, A. & Knight, J. (1998) *Annuitising the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

10.a Hospital auxiliary nurse - unit costs

Commentary: An estimation of the costs of a B grade auxiliary nurse working in a hospital, based on national average data where available. An assumption of unsocial hours worked has been made based on the staffing level required to provide an adequate level of coverage over the 24 hour period during which care is provided. Costs are based on national average data where available. The default figures shown in the two accompanying tables reflect national costs. No investment training has been included.

Unit cost 1997/98	National	London *	Non- London *	Notes
Annual	£16,501	£18,214	£14,216	Annual cost of employment and overheads for the employee.
Weekly	£375	£414	£323	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£10.00	£11.04	£8.62	Total annual cost divided by the number of hours worked per year.
Per hour with patient	£17	£18	£14	Hourly cost adjusted to reflect the proportion of time spent with patients.
Per shift	£75	£83	£65	Total weekly cost divided by the number of shifts per week.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

**10.b Hospital auxiliary
nurse - cost elements**

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£12,057 per year	National average salary for an auxiliary nurse working in a hospital, based on the December 1997 scale mid-point for a B grade nurse. The sum includes an element to reflect the proportion of staff who receive a London allowance. It assumes that the hours include working 13.2 hours a week evening and Saturdays at 1.3 of basic rate, and 4.8 hours a week on Sundays at 1.6 of basic rate.
B. Salary on-costs	£1,441 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£0	No qualifications assumed, although many take NVQ courses.
D. Overheads	£2,000 per year	Comprises £2,000 for indirect overheads. No allowance has been made for direct overheads because it is not possible to separate these from the cost of treatment.
E. Capital overheads	£1,003 per year	Based on the new build and land requirements of NHS facilities (Building Cost Information Service ⁸² and Department of the Environment, Transport and the Regions ⁸³), assuming that auxiliary nurses use one-sixth of an office.
Working time	44 wks p.a., 37.5 hrs p.w.	Nursing and midwifery staffs negotiating council conditions of service and rates of pay. Includes 20 days annual leave and 10 statutory leave days.
Sickness leave	10 days p.a.	Assumed sickness leave.
Study leave	None	No study/training days assumed.
Ratio of direct to indirect time spent on: face-to-face contacts	1:0.67	Assuming 60 per cent of time spent on face-to-face contact, 15 per cent on other clinical activity, and 25 per cent on non-clinical activity. Information derived from consultation with NHS Trusts.
London multiplier	1.11 x (A to D) 1.29 x E	Allows for the higher costs associated with London compared to the national average cost. ⁸⁴ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to D) 0.99 x E	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

⁸² Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.

⁸³ Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.

⁸⁴ Department of Health (1997) *Labour Market Forces Factor*

11.a Community physiotherapist - unit costs

Commentary: An estimation of the costs of a senior 1 grade physiotherapist working in the community and with responsibility for supervision of students. Costs are based on national average data where available. The default figures shown in the two accompanying tables reflect national costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London *	Non- London *	Notes
Annual	£33,164	£36,852	£31,496	Annual cost of employment, qualifications, overheads and travel (assuming 1,250 home visits per year) for the employee.
Weekly	£790	£877	£750	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£22	£24	£21	Total annual cost (excluding travel) divided by the number of hours worked per year.
Per hour with patient	£37	£41	£35	Hourly cost adjusted to reflect the proportion of time spent with patients.
Per hour in clinic	£29	£32	£28	Hourly cost adjusted to reflect the proportion of time in clinics.
Per hour of domiciliary visit	£38	£42	£36	Hourly cost adjusted to reflect the proportion of time in patients' homes.
Per 60 min domiciliary visit	£38	£42	£36	Hourly cost of domiciliary visits combined with the length of a domiciliary visit and including travel costs.
Per 30 min clinic contact	£15	£16	£14	Hourly cost of time spent in clinics combined with the length of a clinic contact.
Per 5.2 hour care episode	£190	£211	£181	Hourly cost of time with patient multiplied by length of episode of care.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

**11.b Community
physiotherapist - cost elements**

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£20,753 per year	National average salary for a senior 1 grade physiotherapist, based on the mid-point of the December 1997 pay scale. The sum includes an element to reflect the proportion of staff who receive a London allowance. It also includes an allowance of £1,035 for supervising students. It does not assume any unsocial hours worked.
B. Salary on-costs	£2,415 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£4,693 per year	See Table 11.c
D. Overheads	£3,158 per year	Comprises £2,000 for indirect overheads and 5 per cent of salary costs for direct revenue overheads.
E. Capital overheads	£2,145 per year	Based on the new build and land requirements of NHS facilities (Building Cost Information Service ⁸⁵ and Department of the Environment, Transport and the Regions ⁸⁶), but adjusted to reflect shared used of both treatment and non-treatment space.
F. Travel	£2 per visit	Taken from Netten ⁸⁷ and inflated using the retail price index. Validated by discussions with a group of NHS Trusts.
Working time	42 wks p.a., 36 hrs p.w.	Includes 25 days annual leave and 10 statutory leave days. ⁸⁸
Sickness leave	10 days p.a.	Assumed sickness leave. ⁸⁹
Study leave	5 days p.a.	Assumed study/training days.
Ratio of direct to indirect time on: face-to-face contacts clinic contacts home visits	1:0.67 1:0.33 1:0.73	It has been assumed that time is spent as follows: 50% on home visits; 10% on clinic contacts; 20% on non-contact time; and 20% on travel. Based on discussions with Trusts.
Length of contacts	60 mins 30 mins	Per clinic contact Per home visit. Based on discussions with Trusts.
London multiplier	1.11 x (A to D) 1.29 x E	Allows for the higher costs associated with London compared to the national average cost. ⁹⁰ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to D) 0.99 x E	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

⁸⁵ Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.

⁸⁶ Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.

⁸⁷ Netten, A. (1992) Some cost implications of Caring for People: interim report, Discussion Paper 809/4, Personal Social Services Research Unit, University of Kent at Canterbury.

⁸⁸ Whitley Councils for the Health Services (Great Britain). Professions allied to medicine and related grades of staff. (PTA) Council. Pay and conditions of service handbook.

⁸⁹ Williams, J. (1991) *Calculating Staffing Levels in Physiotherapy Services*, Pampas, Rotherham.

⁹⁰ Department of Health (1997) *Labour Market Forces Factor*

11.c Community physiotherapist - training elements

Pre-registration	1997/98 value	Degree in Physiotherapy
A. Tuition	£19,374	Total cost of tuition for the physiotherapist's three-year pre-registration training. ⁹¹ This allows for wastage rates as reported by the regional offices of the NHS Executive.
B. Living expenses	£19,539	The estimated cost of a student's living expenses whilst undergoing pre-registration training. ⁹²
C. Clinical placement	£0	Research found that the short-term costs of taking students were generally cancelled out by the long-term benefits. ⁹³
Total investment cost of training	£38,913	This includes the cost of undergraduate training. In order to allow for the distribution of training costs over time, the sub-totals and total figures shown here have all been discounted to the first year of training.
Total equivalent annual cost	£4,693	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 24 years. ⁹⁴ This expected working life estimation reflects the distribution of years worked over a 44 year period.

⁹¹ NHS Executive (1997) Financial Workforce Information Returns, 1997-8 Forecasts.

⁹² Callender, C. & Kempson, E. (1996) Student Finances, PSI: London. Inflated to 1997-8 value.

⁹³ Furness, T. (1993) *The Costs and Benefits of Clinical Placements in Physiotherapy Education in the Trent Region*, Trent Health.

⁹⁴ Netten, A. & Knight, J. (1998) *Annuitying the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

12.a Community occupational therapist - unit costs

Commentary: An estimation of the costs of a senior 1 grade occupational therapist working in the community and with responsibility for supervising students. Costs are based on national average data where available. The default figures shown in the two accompanying tables reflect national costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London *	Non- London *	Notes
Annual	£32,990	£36,658	£31,324	Annual cost of employment, qualifications, overheads and travel (assuming 1,250 home visits per year) for the employee.
Weekly	£785	£873	£746	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£22	£24	£21	Total annual cost (excluding travel) divided by the number of hours worked per year.
Per hour with patient	£36	£40	£35	Hourly cost adjusted to reflect the proportion of time spent with patients.
Per hour in clinic	£29	£32	£28	Hourly cost adjusted to reflect the proportion of time in clinics.
Per hour of domiciliary visit	£38	£42	£36	Hourly cost adjusted to reflect the proportion of time in patients' homes.
Per 60 min domiciliary visit	£38	£42	£36	Hourly cost of domiciliary visits combined with the length of a domiciliary visit and including travel costs.
Per 30 min clinic contact	£15	£16	£14	Hourly cost of time spent in clinics combined with the length of a clinic contact.
Per 5.2 hour care episode	£189	£211	£180	Hourly cost of time with patient multiplied by length of episode of care.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

12.b Community occupational therapist - cost elements

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£20,753 per year	National average salary for a senior 1 grade occupational therapist, based on the mid-point of the December 1997 pay scale. The sum includes an element to reflect the proportion of staff who receive a London allowance. It also includes an allowance of £1,035 for supervising students. It does not assume any unsocial hours worked.
B. Salary on-costs	£2,415 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£4,519 per year	See Table 12.c
D. Overheads	£3,158 per year	Comprises £2,000 for indirect overheads and 5 per cent of salary costs for direct revenue overheads.
E. Capital overheads	£2,145 per year	Based on the new build and land requirements of NHS facilities (Building Cost Information Service ⁹⁵ and Department of the Environment, Transport and the Regions ⁹⁶), but adjusted to reflect shared use of both treatment and non-treatment space.
F. Travel	£2 per visit	Taken from Netten ⁹⁷ and inflated using the retail price index. Validated by discussions with a group of NHS Trusts.
Working time	42 wks p.a., 36 hrs p.w.	Includes 25 days annual leave and 10 statutory leave days. ⁹⁸
Sickness leave	10 days p.a.	Assumed sickness leave.
Study leave	5 days p.a.	Assumed study/training days.
Ratio of direct to indirect time spent on: face-to-face contacts clinic contacts home visits	1:0.67 1:0.33 1:0.73	Assuming 50 per cent of time in patient's own home, 10 per cent in clinics, 20 per cent on non-clinical activity and 20 per cent on travel. Information derived from consultation with NHS Trusts.
Length of contacts	60 mins 30 mins	Per clinic contact Per home visit. Based on discussions with Trusts.
London multiplier	1.11 x (A to D) 1.29 x E	Allows for the higher costs associated with London compared to the national average cost. ⁹⁹ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to D) 0.99 x E	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

⁹⁵ Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.

⁹⁶ Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.

⁹⁷ Netten, A. (1992) Some cost implications of Caring for People: interim report, Discussion Paper 809/4, Personal Social Services Research Unit, University of Kent at Canterbury.

⁹⁸ Whitley Councils for the Health Services (Great Britain). Professions allied to medicine and related grades of staff. (PTA) Council. Pay and conditions of service handbook.

⁹⁹ Department of Health (1997) *Labour Market Forces Factor*

12.c Community occupational therapist - training elements

Pre-registration	1997/98 value	Degree in Occupational Therapy
A. Tuition	£17,994	Total cost of tuition for the occupational therapist's three-year pre-registration training. ¹⁰⁰ This allows for wastage rates as reported by the regional offices of the NHS Executive.
B. Living expenses	£19,539	The estimated cost of a student's living expenses whilst undergoing training. ¹⁰¹
C. Clinical placement	£0	Research found that the short-term costs of taking students were generally cancelled out by the long-term benefits. ¹⁰²
Total investment cost of training	£37,533	This includes the cost of undergraduate training. In order to allow for the distribution of training costs over time, the sub-totals and total figures shown here have all been discounted to the first year of training.
Total equivalent annual cost	£4,519	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 24 years. ¹⁰³ This expected working life estimation reflects the distribution of years worked over a 44 year period.

¹⁰⁰ NHS Executive (1997) Financial Workforce Information Returns, 1997-8 Forecasts.

¹⁰¹ Callender, C. & Kempson, E. (1996) Student Finances, PSI: London. Inflated to 1997-8 value.

¹⁰² Regional Health Authorities (1993) *In the Balance: The Costs and Benefits of Clinical Placement in Healthcare Education*.

¹⁰³ Netten, A. & Knight, J. (1998) *Annuitising the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

13.a Community speech and language therapist - unit costs

Commentary: An estimation of the costs of a grade 2 speech and language therapist working in the community. Costs are based on national average data where available. The default figures shown in the two accompanying tables reflect national costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London *	Non- London *	Notes
Annual	£30,934	£34,375	£30,494	Annual cost of employment, qualifications, overheads and travel (assuming 1,250 home visits per year) for the employee.
Weekly	£737	£838	£744	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£20	£23	£21	Total annual cost (excluding travel) divided by the number of hours worked per year.
Per hour with patient	£34	£39	£34	Hourly cost adjusted to reflect the proportion of time spent with patients.
Per hour in clinic	£27	£31	£28	Hourly cost adjusted to reflect the proportion of time in clinics.
Per hour of domiciliary visit	£35	£40	£36	Hourly cost adjusted to reflect the proportion of time in patients' homes.
Per 60 min domiciliary visit	£35	£40	£36	Hourly cost of domiciliary visits combined with the length of a domiciliary visit and including travel costs.
Per 30 min clinic contact	£14	£16	£14	Hourly cost of time spent in clinics combined with the length of a clinic contact.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

13.b Community speech and language therapist - cost elements

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£18,538 per year	National average salary for a grade 2 speech and language therapist, based on the December 1997 pay scales. The sum includes an element to reflect the proportion of staff who receive a London allowance.
B. Salary on-costs	£2,167 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£5,048 per year	See Table 13.c
D. Overheads	£3,035 per year	Comprises £2,000 for indirect overheads and 5 per cent of salary costs for direct revenue overheads.
E. Capital overheads	£2,145 per year	Based on the new build and land requirements of NHS facilities (Building Cost Information Service ¹⁰⁴ and Department of the Environment, Transport and the Regions ¹⁰⁵), but adjusted to reflect shared used of both treatment and non-treatment space.
F. Travel	£2 per visit	Taken from Netten ¹⁰⁶ and inflated using the retail price index. Validated by discussions with a group of NHS Trusts.
Working time	42 wks p.a., 36 hrs p.w.	Includes 25 days annual leave and 10 statutory leave days. ¹⁰⁷
Sickness leave	10 days p.a.	Assumed sickness leave.
Study leave	5 days p.a.	Assumed study/training days.
<i>Ratio of direct to indirect time spent on:</i> face-to-face contacts clinical settings home visits	1:0.67 1:0.33 1:0.73 x	Assuming 50 per cent of time in patient's own home, 10 per cent in clinics, 20 per cent on non-clinical activity and 20 per cent on travel. Information derived from consultation with NHS Trusts.
Length of contacts	60 mins 30 mins	Per clinic contact Per home visit. Based on discussions with Trusts.
London multiplier	1.11 x (A to D) 1.29 x E	Allows for the higher costs associated with London compared to the national average cost. ¹⁰⁸ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to D) 0.99 x E	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

¹⁰⁴ Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.

¹⁰⁵ Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.

¹⁰⁶ Netten, A. (1992) Some cost implications of Caring for People: interim report, Discussion Paper 809/4, Personal Social Services Research Unit, University of Kent at Canterbury.

¹⁰⁷ Department of Health Advance Letter (SP) 5/91, Appendix F.

¹⁰⁸ Department of Health (1997) *Labour Market Forces Factor*

13.c Community speech and language therapist - training elements

Pre-registration	1997/98 value	Degree relevant to Speech and Language Therapy
A. Tuition	£13,819	Total cost of tuition for the speech and language therapist's four-year pre-registration training ¹⁰⁹ based on information derived from a survey of educational institutions. This allows for wastage as reported by the institutions.
B. Living expenses	£25,329	The estimated cost of a student's living expenses whilst undergoing training. ¹¹⁰
C. Clinical placement	£0	Research found that the short-term costs of taking students were generally cancelled out by the long-term benefits. ¹¹¹
Total investment cost of training	£39,148	This includes the cost of undergraduate training. In order to allow for the distribution of training costs over time, the sub-totals and total figures shown here have all been discounted to the first year of training.
Total equivalent annual cost	£5,048	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 25 years. ¹¹² This expected working life estimation reflects the distribution of years worked over a 44 year period.

¹⁰⁹ NHS Executive (1997) Financial Workforce Information Returns, 1997-8 Forecasts.

¹¹⁰ Callender, C. & Kempson, E. (1996) Student Finances, PSI: London. Inflated to 1997-8 value.

¹¹¹ Regional Health Authorities (1993) *In the Balance: The Costs and Benefits of Clinical Placement in Healthcare Education*.

¹¹² Netten, A. & Knight, J. (1998) *Annuitising the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

**14.a Hospital
physiotherapist - unit costs**

Commentary: An estimation of the costs of a senior 1 grade physiotherapist based in a hospital outpatients department and making occasional home visits. The physiotherapist has responsibility for supervision of students. The default figures shown in the two accompanying tables reflect national costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London *	Non- London *	Notes
Annual	£33,528	£37,241	£31,804	Annual cost of employment, qualifications and overheads for the employee. Travel costs have not been included.
Weekly	£798	£887	£757	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£22	£25	£21	Total annual cost divided by the number of hours worked per year.
Per hour in clinical setting	£34	£38	£32	Hourly cost adjusted to reflect the proportion of time in clinical setting.
Per hour of domiciliary visit	£43	£48	£41	Hourly cost adjusted to reflect the proportion of time in patients' homes.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

14.b Hospital physiotherapist - cost elements

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£20,753 per year	National average salary for a senior 1 grade hospital physiotherapist, based on the mid-point of the December 1997 pay scales. The sum includes an element to reflect the proportion of staff who receive a London allowance. It also includes an allowance of £1,035 for supervising students. No unsocial hours are assumed.
B. Salary on-costs	£2,415 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£4,693 per year	See Table 14.c
D. Overheads	£2,000 per year	Comprises £2,000 for indirect overheads. No allowance has been made for direct overheads because it is not possible to separate these from the cost of treatment.
E. Capital overheads	£3,668 per year	Based on the new build and land requirements of NHS facilities (Building Cost Information Service ¹¹³ and Department of the Environment, Transport and the Regions ¹¹⁴), but adjusted to reflect shared used of both treatment and non-treatment space.
F. Travel	£2 per visit	Taken from Netten ¹¹⁵ and inflated using the retail price index. Validated by discussions with a group of NHS Trusts.
Working time	42 wks p.a., 36 hrs p.w.	Includes 25 days annual leave and 10 statutory leave days. ¹¹⁶
Sickness leave	10 days p.a.	Assumed sickness leave.
Study leave ^{0.54}	5 days p.a.	Assumed study/training days.
<i>Ratio of direct to indirect time spent on:</i> face-to-face contacts clinical settings home visits	1:0.54 1:0.46 1:0.96	Assuming 10 per cent of time in patient's own home, 50 per cent in clinics, 5 per cent in other settings, 30 per cent on non-clinical activity and 5 per cent on travel. Information derived from consultation with NHS Trusts.
London multiplier	1.11 x (A to D) 1.25 x E	Allows for the higher costs associated with London compared to the national average cost. ¹¹⁷ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to D) 0.99 x E	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

¹¹³ Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.

¹¹⁴ Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.

¹¹⁵ Netten, A. (1992) Some cost implications of Caring for People: interim report, Discussion Paper 809/4, Personal Social Services Research Unit, University of Kent at Canterbury.

¹¹⁶ Whitley Councils for the Health Services (Great Britain). Professions allied to medicine and related grades of staff. (PTA) Council. Pay and conditions of service handbook.

¹¹⁷ Department of Health (1997) *Labour Market Forces Factor*

14.c Hospital physiotherapist - training elements

Pre-registration	1997/98 value	Degree in Physiotherapy
A. Tuition	£19,374	Total cost of tuition for the physiotherapist's pre-registration training. This allows for wastage at the rates reported by the regional offices of the NHS Executive.
B. Living expenses	£19,539	The estimated cost of a student's living expenses whilst undergoing training. ¹¹⁸
C. Clinical placement	£0	Research found that the short-term costs of taking students were generally cancelled out by the long-term benefits.
Total investment cost of training	£38,913	This includes the cost of undergraduate training. In order to allow for the distribution of training costs over time, the sub-totals and total figures shown here have all been discounted to the first year of training.
Total equivalent annual cost	£4,693	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 24 years. ¹¹⁹ This expected working life estimation reflects the distribution of years worked over a 44 year period.

¹¹⁸ Callender, C. & Kempson, E. (1996) Student Finances, PSI: London. Inflated to 1997-8 value.

¹¹⁹ Netten, A. & Knight, J. (1998) *Annuitising the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

15.a Hospital dietitian - unit costs

Commentary: An estimation of the costs of a senior 1 grade dietitian based in a hospital. It is assumed that the dietitian spends time with both inpatients and outpatients, as well as making some home visits. The dietitian has responsibility for supervision of students. The default figures shown in the two accompanying tables reflect national costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London *	Non- London *	Notes
Annual	£33,242	£36,742	£31,562	Annual cost of employment, qualifications and overheads for the employee. Travel costs have not been included.
Weekly	£791	£875	£751	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£21	£24	£21	Total annual cost divided by the number of hours worked per year.
Per hour in clinical settings	£27	£31	£26	Hourly cost adjusted to reflect the proportion of time in clinical settings.
Per hour of domiciliary visit	£48	£55	£47	Hourly cost adjusted to reflect the proportion of time in patients' homes.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

**15.b Hospital dietitian -
cost elements**

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£20,753 per year	National average salary for a senior 1 grade hospital dietitian, based on the mid-point of the December 1997 pay scales. The sum includes an element to reflect the proportion of staff who receive a London allowance. It also includes an allowance of £1,035 for supervising students. No unsocial hours are assumed.
B. Salary on-costs	£2,415 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£5,016 per year	See Table 15.c
D. Overheads	£2,000 per year	Comprises £2,000 for indirect overheads. No allowance has been made for direct overheads because it is not possible to separate these from the cost of treatment.
E. Capital overheads	£3,058 per year	Based on the new build and land requirements of NHS facilities (Building Cost Information Service ¹²⁰ and Department of the Environment, Transport and the Regions ¹²¹), but adjusted to reflect shared use of both treatment and non-treatment space.
F. Travel	£2 per visit	Taken from Netten ¹²² and inflated using the retail price index. Validated by discussions with a group of NHS Trusts.
Working time	42 wks p.a., 37 hrs p.w.	Includes 25 days annual leave and 10 statutory leave days. ¹²³
Sickness leave	10 days p.a.	Assumed sickness leave.
Study leave	5 days p.a.	Assumed study/training days.
Ratio of direct to indirect time spent on: face-to-face contacts clinical settings home visits	1:0.33 1:0.27 1:1.27	Assuming 5 per cent of time in patient's own home, 35 per cent in clinics, 30 per cent in hospital wards, 5 per cent in other settings, 20 per cent on non-clinical activity and 5 per cent on travel. Information derived from consultation with NHS Trusts.
London multiplier	1.11 x (A to D) 1.27 x E	Allows for the higher costs associated with London compared to the national average cost. ¹²⁴ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to D) 0.99 x E	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

¹²⁰ Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.

¹²¹ Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.

¹²² Netten, A. (1992) Some cost implications of Caring for People: interim report, Discussion Paper 809/4, Personal Social Services Research Unit, University of Kent at Canterbury.

¹²³ Whitley Councils for the Health Services (Great Britain). Professions allied to medicine and related grades of staff. (PTA) Council. Pay and conditions of service handbook.

¹²⁴ Department of Health (1997) *Labour Market Forces Factor*

15.c Hospital dietitian - training elements

Pre-registration	1997/98 value	Degree in Dietetics
A. Tuition	£14,069	Total cost of tuition for the dietitian's four-year pre-registration training ¹²⁵ based on information derived from a survey of educational institutions. This allows for wastage as reported by the institutions.
B. Living expenses	£25,329	The estimated cost of a student's living expenses whilst undergoing training. ¹²⁶
C. Clinical placement	£0	Research found that the short-term costs of taking students were generally cancelled out by the long-term benefits. ¹²⁷
Total investment cost of training	£39,398	This includes the cost of undergraduate training. In order to allow for the distribution of training costs over time, the sub-totals and total figures shown here have all been discounted to the first year of training.
Total equivalent annual cost	£5,016	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 23 years. ¹²⁸ This expected working life estimation reflects the distribution of years worked over a 44 year period.

¹²⁵ NHS Executive (1997) Financial Workforce Information Returns, 1997-8 Forecasts.

¹²⁶ Callender, C. & Kempson, E. (1996) Student Finances, PSI: London. Inflated to 1997-8 value.

¹²⁷ Regional Health Authorities (1993) *In the Balance: The Costs and Benefits of Clinical Placement in Healthcare Education*.

¹²⁸ Netten, A. & Knight, J. (1998) *Annuitising the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

**16.a Hospital speech and
language therapist - unit costs**

Commentary: An estimation of the costs of a grade 2 speech and language therapist working in the outpatients department of a hospital. Costs are based on national average data where available. The default figures shown in the two accompanying tables reflect national costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London *	Non- London *	Notes
Annual	£31,359	£34,724	£30,848	Annual cost of employment, qualifications and overheads for the employee.
Weekly	£747	£827	£734	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£21	£23	£20	Total annual cost divided by the number of hours worked per year.
Per hour in clinical settings	£35	£38	£34	Hourly cost adjusted to reflect the proportion of time in clinical settings.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

16.b Hospital speech and language therapist - cost elements

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£18,538 per year	National average salary for a grade 2 speech and language therapist, based on the December 1997 pay scales. The sum includes an element to reflect the proportion of staff who receive a London allowance.
B. Salary on-costs	£2,167 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£5,048 per year	See Table 16.c
D. Overheads	£2,000 per year	Comprises £2,000 for indirect overheads. No allowance has been made for direct overheads because it is not possible to separate these from the cost of treatment.
E. Capital overheads	£3,606 per year	Based on the new build and land requirements of NHS facilities (Building Cost Information Service ¹²⁹ and Department of the Environment, Transport and the Regions ¹³⁰), but adjusted to reflect shared use of both treatment and non-treatment space.
Working time	42 wks p.a., 36 hrs p.w.	Nursing and midwifery staffs negotiating council conditions of service and rates of pay. Includes 25 days annual leave and 10 statutory leave days.
Sickness leave	10 days p.a.	Assumed sickness leave.
Study leave	5 days p.a.	Assumed study/training days.
<i>Ratio of direct to indirect time spent on:</i> face-to-face contacts clinical settings	1:0.67 1:0.67	Assuming 60 per cent of time in clinics and 40 per cent on non-clinical activity. Information derived from consultation with NHS Trusts.
London multiplier	1.11 x (A to D) 1.25 x E	Allows for the higher costs associated with London compared to the national average cost. ¹³¹ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to D) 0.99 x E	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

¹²⁹ Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.

¹³⁰ Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.

¹³¹ Department of Health (1997) *Labour Market Forces Factor*

**16.c Hospital speech and
language therapist - training elements**

Pre-registration	1997/98 value	Degree relevant to speech and language therapy
A. Tuition	£13,819	Total cost of tuition for the speech and language therapist's four-year pre-registration training ¹³² based on information derived from a survey of educational institutions. This allows for wastage as reported by the institutions.
B. Living expenses	£25,329	The estimated cost of a student's living expenses whilst undergoing training. ¹³³
C. Clinical placement	£0	Research found that the short-term costs of taking students were generally cancelled out by the long-term benefits. ¹³⁴
Total investment cost of training	£39,148	This includes the cost of undergraduate training. In order to allow for the distribution of training costs over time, the sub-totals and total figures shown here have all been discounted to the first year of training.
Total equivalent annual cost	£5,048	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 25 years. ¹³⁵ This expected working life estimation reflects the distribution of years worked over a 44 year period.

¹³² NHS Executive (1997) Financial Workforce Information Returns, 1997-8 Forecasts.

¹³³ Callender, C. & Kempson, E. (1996) Student Finances, PSI: London. Inflated to 1997-8 value.

¹³⁴ Regional Health Authorities (1993) *In the Balance: The Costs and Benefits of Clinical Placement in Healthcare Education*.

¹³⁵ Netten, A. & Knight, J. (1998) *Annuitising the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

17.a Hospital radiographer - unit costs

Commentary: An estimation of the costs of a senior 1 grade radiographer who has responsibility for supervision of students. The default figures shown in the two accompanying tables reflect national costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London *	Non- London *	Notes
Annual	£35,360	£39,603	£33,398	Annual cost of employment, qualifications and overheads for the employee.
Weekly	£842	£943	£795	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£24	£27	£23	Total annual cost divided by the number of hours worked per year.
Per hour with patient	£40	£45	£38	Hourly cost adjusted to reflect the proportion of time spent with patients.
Per 20 min clinic contact	£13	£15	£13	Annual cost divided by the number of contacts made per year.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

**17.b Hospital
radiographer - cost elements**

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£20,753 per year	National average salary for a senior 1 grade radiographer, based on the mid-point of the December 1997 pay scales. The sum includes an element to reflect the proportion of staff who receive a London allowance. It also includes an allowance of £1,035 for supervision of students. No unsocial hours are assumed.
B. Salary on-costs	£2,415 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£5,615 per year	See Table 14.c
D. Overheads	£2,000 per year	Comprises £2,000 for indirect overheads. No allowance has been made for direct overheads because it is not possible to separate these from the cost of treatment.
E. Capital overheads	£4,577 per year	Based on the new build and land requirements of NHS facilities (Building Cost Information Service ¹³⁶ and Department of the Environment, Transport and the Regions ¹³⁷), but adjusted to reflect shared used of both treatment and non-treatment space.
Working time	42 wks p.a., 35 hrs p.w.	Includes 25 days annual leave and 10 statutory leave days. ¹³⁸
Sickness leave	10 days p.a.	Assumed sickness leave.
Study leave	5 days p.a.	Assumed study/training days.
Ratio of direct to indirect time spent on: patient contacts	1:0.67	Assuming 60 per cent of time spent on face-to-face contact, 20 per cent on other clinical activity, and 20 per cent on non-clinical activity. Information derived from consultation with NHS Trusts.
London multiplier	1.11 x (A to D) 1.31 x E	Allows for the higher costs associated with London compared to the national average cost. ¹³⁹ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to D) 0.99 x E	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

¹³⁶ Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.

¹³⁷ Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.

¹³⁸ Whitley Councils for the Health Services (Great Britain). Professions allied to medicine and related grades of staff. (PTA) Council. Pay and conditions of service handbook.

¹³⁹ Department of Health (1997) *Labour Market Forces Factor*

17.c Hospital radiographer - training elements

Pre-registration	1997/98 value	Degree in Radiography
A. Tuition	£26,808	Total cost of tuition for the radiographer's three-year pre-registration training. ¹⁴⁰ This allows for wastage at the rates reported by the regional offices of the NHS Executive.
B. Living expenses	£19,539	The estimated cost of a student's living expenses whilst undergoing training. ¹⁴¹
C. Clinical placement	£0	Research found that the short-term costs of taking students were generally cancelled out by the long-term benefits. ¹⁴²
Total investment cost of training	£46,347	This includes the cost of undergraduate training. In order to allow for the distribution of training costs over time, the sub-totals and total figures shown here have all been discounted to the first year of training.
Total equivalent annual cost	£5,615	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 24 years. ¹⁴³ This expected working life estimation reflects the distribution of years worked over a 44 year period.

¹⁴⁰ NHS Executive (1997) Financial Workforce Information Returns, 1997-8 Forecasts.

¹⁴¹ Callender, C. & Kempson, E. (1996) Student Finances, PSI: London. Inflated to 1997-8 value.

¹⁴² Regional Health Authorities (1993) *In the Balance: The Costs and Benefits of Clinical Placement in Healthcare Education*.

¹⁴³ Netten, A. & Knight, J. (1998) *Annuitising the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

18.a Hospital occupational therapist - unit costs

Commentary: An estimation of the costs of a senior 1 grade occupational therapist based in a hospital outpatients department and with responsibility for supervision of students. The default figures shown in the two accompanying tables reflect national costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London *	Non- London *	Notes
Annual	£33,354	£37,048	£31,642	Annual cost of employment, qualifications and overheads for the employee.
Weekly	£794	£882	£753	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£22	£25	£21	Total annual cost divided by the number of hours worked per year.
Per hour in clinical settings	£37	£41	£35	Hourly cost adjusted to reflect the proportion of time in clinical settings.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

18.b Hospital occupational therapist - cost elements

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£20,753 per year	National average salary for a senior 1 grade hospital occupational therapist, based on the mid-point of the December 1997 pay scales. The sum includes an element to reflect the proportion of staff who receive a London allowance. It also includes an allowance of £1,035 for supervising students. No unsocial hours are assumed.
B. Salary on-costs	£2,415 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£4,519 per year	See Table 18.c
D. Overheads	£2,000 per year	Comprises £2,000 for indirect overheads. No allowance has been made for direct overheads because it is not possible to separate these from the cost of treatment.
E. Capital overheads	£3,668 per year	Based on the new build and land requirements of NHS facilities (Building Cost Information Service ¹⁴⁴ and Department of the Environment, Transport and the Regions ¹⁴⁵), but adjusted to reflect shared use of both treatment and non-treatment space.
Working time	42 wks p.a., 36 hrs p.w.	Includes 25 days annual leave and 10 statutory leave days. ¹⁴⁶
Sickness leave	10 days p.a.	Assumed sickness leave.
Study leave	5 days p.a.	Assumed study/training days.
<i>Ratio of direct to indirect time spent on:</i> face-to-face contacts clinical settings	1:0.67 1:0.67	Assuming 60 per cent of time in clinics and 40 per cent on non-clinical activity. Information derived from consultation with NHS Trusts.
London multiplier	1.11 x (A to D) 1.25 x E	Allows for the higher costs associated with London compared to the national average cost. ¹⁴⁷ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to D) 0.99 x E	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

¹⁴⁴ Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.

¹⁴⁵ Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.

¹⁴⁶ Whitley Councils for the Health Services (Great Britain). Professions allied to medicine and related grades of staff. (PTA) Council. Pay and conditions of service handbook.

¹⁴⁷ Department of Health (1997) *Labour Market Forces Factor*

18.c Hospital occupational therapist - training elements

Pre-registration	1997/98 value	Degree in Occupational Therapy
A. Tuition	£17,994	Total cost of tuition for the occupational therapist's three-year pre-registration training. ¹⁴⁸ This allows for wastage at the rates reported by the regional offices of the NHS Executive.
B. Living expenses	£19,539	The estimated cost of a student's living expenses whilst undergoing training. ¹⁴⁹
C. Clinical placement	£0	Research found that the short-term costs of taking students were generally cancelled out by the long-term benefits. ¹⁵⁰
Total investment cost of training	£37,533	This includes the cost of undergraduate training. In order to allow for the distribution of training costs over time, the sub-totals and total figures shown here have all been discounted to the first year of training.
Total equivalent annual cost	£4,519	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 24 years. ¹⁵¹ This expected working life estimation reflects the distribution of years worked over a 44 year period.

¹⁴⁸ NHS Executive (1997) Financial Workforce Information Returns, 1997-8 Forecasts.

¹⁴⁹ Callender, C. & Kempson, E. (1996) Student Finances, PSI: London. Inflated to 1997-8 value.

¹⁵⁰ Regional Health Authorities (1993) *In the Balance: The Costs and Benefits of Clinical Placement in Healthcare Education*.

¹⁵¹ Netten, A. & Knight, J. (1998) *Annuitising the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

19.a Therapy support worker - unit costs

Commentary: An estimation of the costs of a therapy support worker based in a hospital outpatients department and making occasional home visits. The default figures shown in the two accompanying tables reflect national costs. No investment training has been included.

Unit cost 1997/98	National	London *	Non- London *	Notes
Annual	£14,628	£16,333	£14,431	Annual cost of employment, qualifications and overheads for the employee. Travel costs are not included.
Weekly	£332	£371	£328	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£9.23	£10.31	£9.11	Total annual cost divided by the number of hours worked per year.
Per hour with patient	£12	£13	£11	Hourly cost adjusted to reflect the proportion of time spent with patients.
Per hour in clinical settings	£12	£13	£11	Hourly cost adjusted to reflect the proportion of time in clinic settings.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

**19.b Therapy support
worker - cost elements**

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£9,440 per year	National average salary for a therapy helper aged 19 and over, based on the mid-point of the December 1997 pay scale. The sum includes an element to reflect the proportion of staff who receive a London allowance. No unsocial hours are assumed.
B. Salary on-costs	£852 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£0	No qualifications assumed, although many take NVQ courses.
D. Overheads	£2,000 per year	Comprises £2,000 for indirect overheads. No allowance has been made for direct overheads because it is not possible to separate these from the cost of treatment.
E. Capital overheads	£2,335 per year	Based on the new build and land requirements of NHS facilities (Building Cost Information Service ¹⁵² and Department of the Environment, Transport and the Regions ¹⁵³), but adjusted to reflect shared used of both treatment and non-treatment space.
Working time	44 wks p.a., 36 hrs p.w.	Includes 20 days annual leave and 10 statutory leave days. ¹⁵⁴
Sickness leave	10 days p.a.	Assumed sickness leave.
Study leave	0	No study days assumed.
<i>Ratio of direct to indirect time spent on:</i> face-to-face contacts clinical settings	1:0.25 1:0.25	Assuming 80 per cent of time on hospital wards and 20 per cent on non-clinical activity. Information derived from consultation with NHS Trusts.
London multiplier	1.11 x (A to D) 1.29 x E	Allows for the higher costs associated with London compared to the national average cost. ¹⁵⁵ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to D) 0.99 x E	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

¹⁵² Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.

¹⁵³ Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.

¹⁵⁴ Whitley Councils for the Health Services (Great Britain). Professions allied to medicine and related grades of staff. (PTA) Council. Pay and conditions of service handbook.

¹⁵⁵ Department of Health (1997) *Labour Market Forces Factor*

20.a Pre-registration house officer - unit costs

Commentary: An estimation of the costs of a pre-registration house officer. The default figures shown in the two accompanying tables reflect national costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London *	Non- London *	Notes
Annual	£50,914	£56,621	£47,752	Annual cost of employment, qualifications and overheads for the employee.
Weekly	£1,157	£1,287	£1,061	Hourly cost multiplied by the average number of hours worked per week.
Per duty hour	£16	£18	£15	Total weekly cost (including additional hours) divided by the total number of hours on duty per week.
Per hour worked	£21	£23	£19	Total weekly cost (including additional hours) divided by the total number of hours worked per week.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

**20.b Pre-registration
house officer - cost elements**

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£21,267 per year	Based on payment for 40.7 basic hours per week on duty (of which 88.7 per cent are actually worked), and 31.7 additional hours per week (of which 59.6 per cent are actually worked at a rate of 50 per cent of basic rate). ¹⁵⁶ It does not reflect payments for London allowances.
B. Salary on-costs	£2,259 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£21,215 per year	See Table 20.c
D. Overheads	£2,000 per year	Comprises £2,000 for indirect overheads. No allowance has been made for direct overheads because it is not possible to separate these from the cost of treatment.
E. Ongoing training	£1,857 per year	Ongoing training is calculated using budgetary information provided by the Medical Education Funding Unit of the NHS Executive relating to allocation of Medical and Dental Education Levy funds. Adjustment has been made to reflect assumed usage of educational facilities by this grade of doctor.
F. Capital overheads	£2,316 per year	Based on the new build and land requirements of NHS facilities (Building Cost Information Service ¹⁵⁷ and Department of the Environment, Transport and the Regions ¹⁵⁸). Adjustments have been made to reflect shared use of administration and recreational facilities, including accommodation for night-time duties. Treatment space has not been included.
Working time	44 wks p.a.	Includes 25 days annual leave and 10 statutory leave days.
Sickness leave	5 days p.a.	Assumed sickness leave.
Study leave	0 days	No study days assumed.
London multiplier	1.11 x (A to E) 1.27 x F	Allows for the higher costs associated with London compared to the national average cost. ¹⁵⁹ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to E) 0.99 x F	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

¹⁵⁶ *Review Body on Doctors' and Dentists' Remuneration*, Twenty-Third Report 1994, The Stationery Office, London.

¹⁵⁷ Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.

¹⁵⁸ Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.

¹⁵⁹ Department of Health (1997) *Labour Market Forces Factor*

20.c Pre-registration house officer - training elements

Pre-registration	1997/98 value	Undergraduate medical degree
A. Tuition	£39,323	Total cost of tuition during a five year undergraduate medical degree. ¹⁶⁰ This allows for the annual wastage rates reported by a sample of medical schools, ranging from 1 per cent to 9 per cent.
B. Living expenses	£31,482	The estimated cost of a medical student's living expenses whilst undergoing undergraduate training. ¹⁶¹
C. Clinical placement	£98,662	An estimate of the excess service costs as a result of providing clinical placements during the latter three years of the course. The per capita figure is estimated by allocating the Service Increment for Teaching (SIFT) levy. The sum includes both facilities and clinical placement components of the funding. ¹⁶²
Total investment cost of training	£169,467	This includes the cost of undergraduate medical education. In order to allow for the distribution of training costs over time, the sub totals and total figures shown here have all been discounted to the first year of training.
Total equivalent annual cost	£21,215	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 27 years. ¹⁶³ This expected working life estimation reflects the distribution of years worked over a 42 year period.

¹⁶⁰ Information derived from a questionnaire survey of funding for and numbers of medical students at a sample of medical schools, in 1995-6, inflated to 1997-8 value.

¹⁶¹ Callender, C. & Kempson, E. (1996) Student Finances, PSI: London. Inflated to 1997-8 value.

¹⁶² NHS Executive, (1995) SIFT into the Future, Department of Health.

¹⁶³ Netten, A. & Knight, J. (1998) *Annuitising the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

21.a Senior house officer
- unit costs

Commentary: An estimation of the costs of a senior house officer. The default figures shown in the two accompanying tables reflect national costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London *	Non- London *	Notes
Annual	£61,101	£63,326	£55,815	Annual cost of employment, qualifications and overheads for the employee.
Weekly	£1,608	£1,666	£1,431	Hourly cost multiplied by the average number of hours worked per week.
Per duty hour	£22	£23	£20	Total weekly cost (including additional hours) divided by the total number of hours on duty per week.
Per hour worked	£32	£33	£29	Total weekly cost (including additional hours) divided by the total number of hours worked per week.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

21.b Senior house officer - cost elements

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£28,538 per year	Based on payment for 38.9 basic hours per week on duty (of which 87 per cent are actually worked), and 33.6 additional hours per week (of which 48 per cent are actually worked at a rate of 50 per cent of basic rate). ¹⁶⁴ It does not reflect payments for London allowances.
B. Salary on-costs	£3,150 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£22,697 per year	See Table 21.c
D. Overheads	£2,000 per year	Comprises £2,000 for indirect overheads. No allowance has been made for direct overheads because it is not possible to separate these from the cost of treatment.
E. Ongoing training	£2,399 per year	Ongoing training is calculated using budgetary information provided by the Medical Education Funding Unit of the NHS Executive relating to allocation of Medical and Dental Education Levy funds. Adjustment has been made to reflect assumed usage of educational facilities by this grade of doctor.
F. Capital overheads	£2,316 per year	Based on the new build and land requirements of NHS facilities (Building Cost Information Service ¹⁶⁵ and Department of the Environment, Transport and the Regions ¹⁶⁶). Adjustments have been made to reflect shared use of administration and recreational facilities, including accommodation for night-time duties. Treatment space has not been included.
Working time	38 wks p.a.	Includes 25 days annual leave and 10 statutory leave days.
Sickness leave	5 days p.a.	Assumed sickness leave.
Study leave	30 days p.a.	Assumed study/training days.
London multiplier	1.11 x (A to E) 1.27 x F	Allows for the higher costs associated with London compared to the national average cost. ¹⁶⁷ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to E) 0.99 x F	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

¹⁶⁴ *Review Body on Doctors' and Dentists' Remuneration*, Twenty-Third Report 1994, The Stationery Office, London.

¹⁶⁵ Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.

¹⁶⁶ Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.

¹⁶⁷ Department of Health (1997) *Labour Market Forces Factor*

21.c Senior house officer - training elements

Pre-registration	1997/98 value	Undergraduate medical degree
A. Tuition	£39,323	Total cost of tuition during a five year undergraduate medical degree. ¹⁶⁸ This allows for the annual wastage rates reported by a sample of medical schools, ranging from 1 per cent to 9 per cent.
B. Living expenses	£31,482	The estimated cost of a medical student's living expenses whilst undergoing undergraduate training. ¹⁶⁹
C. Clinical placement	£98,662	An estimate of the excess service costs as a result of providing clinical placements during the latter three years of the course. The per capita figure is estimated by allocating the Service Increment for Teaching (SIFT) levy. The sum includes both facilities and clinical placement components of the funding. ¹⁷⁰
Total	£169,467	In order to allow for the distribution of training costs over time, the sub totals and total figures shown here have all been discounted to the first year of training.
Post-Graduate	1997/98 value	Post graduate medical education
Pre-registration house officer	£13,297	The total cost met by the Medical and Dental Education Levy (MADEL), during the one year spent as a pre-registration house officer. ¹⁷¹ This represents 100 per cent of salary costs and a weighted proportion of MADEL funds, based upon an assumed proportional usage of the educational facilities by this grade of doctor.
Total investment cost of training	£182,764	This includes the cost of undergraduate medical education and one year spent as a pre-registration house officer. In order to allow for the distribution of training costs over time, the sub totals and total figures shown here have all been discounted to the first year of training.
Total equivalent annual cost	£22,697	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 28 years. ¹⁷² This expected working life estimation reflects the distribution of years worked over a 42 year period.

¹⁶⁸ Information derived from a questionnaire survey of funding for and numbers of medical students at a sample of medical schools, in 1995-6, inflated to 1997-8 value.

¹⁶⁹ Callender, C. & Kempson, E. (1996) *Student Finances*, PSI: London. Inflated to 1997-8 value.

¹⁷⁰ NHS Executive, (1995) *SIFT into the Future*, Department of Health.

¹⁷¹ Derived from budgetary information received from the Medical Education Funding Unit at the NHS Executive.

¹⁷² Netten, A. & Knight, J. (1998) *Annuitising the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

22.a Specialist registrar - unit costs

Commentary: An estimation of the costs of a specialist registrar. The default figures shown in the two accompanying tables reflect national costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London *	Non- London *	Notes
Annual	£68,606	£71,663	£63,021	Annual cost of employment, qualifications and overheads for the employee.
Weekly	£1,854	£1,886	£1,616	Hourly cost multiplied by the average number of hours worked per week.
Per duty hour	£26	£27	£23	Total weekly cost (including additional hours) divided by the total number of hours on duty per week.
Per hour worked	£38	£39	£33	Total weekly cost (including additional hours) divided by the total number of hours worked per week.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

**22.b Specialist registrar -
cost elements**

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£33,233 per year	Based on payment for 39.9 basic hours per week on duty (of which 89 per cent are actually worked), and 30.7 additional hours per week (of which 43 per cent are actually worked at a rate of 50 per cent of basic rate). ¹⁷³ It does not reflect payments for London allowances.
B. Salary on-costs	£3,799 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£24,858 per year	See Table 22.c
D. Overheads	£2,000 per year	Comprises £2,000 for indirect overheads. No allowance has been made for direct overheads because it is not possible to separate these from the cost of treatment.
E. Ongoing training	£2,399 per year	Ongoing training is calculated using budgetary information provided by the Medical Education Funding Unit of the NHS Executive relating to allocation of Medical and Dental Education Levy funds. Adjustment has been made to reflect assumed usage of educational facilities by this grade of doctor.
F. Capital overheads	£2,316 per year	Based on the new build and land requirements of NHS facilities (Building Cost Information Service ¹⁷⁴ and Department of the Environment, Transport and the Regions ¹⁷⁵). Adjustments have been made to reflect shared use of administration and recreational facilities, including accommodation for night-time duties. Treatment space has not been included.
Working time	37 wks p.a.	Includes 30 days annual leave and 10 statutory leave days.
Sickness leave	5 days p.a.	Assumed sickness leave.
Study leave	30 days p.a.	Assumed study/training days.
London multiplier	1.11 x (A to E) 1.27 x F	Allows for the higher costs associated with London compared to the national average cost. ¹⁷⁶ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to E) 0.99 x F	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

¹⁷³ *Review Body on Doctors' and Dentists' Remuneration*, Twenty-Third Report 1994, The Stationery Office, London.

¹⁷⁴ Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.

¹⁷⁵ Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.

¹⁷⁶ Department of Health (1997) *Labour Market Forces Factor*

22.c Specialist registrar - training elements

Pre-registration	1997/98 value	Undergraduate medical degree
A. Tuition	£39,323	Total cost of tuition during a five year undergraduate medical degree. ¹⁷⁷ This allows for the annual wastage rates reported by a sample of medical schools, ranging from 1 per cent to 9 per cent.
B. Living expenses	£31,482	The estimated cost of a medical student's living expenses whilst undergoing undergraduate training. ¹⁷⁸
C. Clinical placement	£98,662	An estimate of the excess service costs as a result of providing clinical placements during the latter three years of the course. The per capita figure is estimated by allocating the Service Increment for Teaching (SIFT) levy. The sum includes both facilities and clinical placement components of the funding. ¹⁷⁹
Total	£169,467	In order to allow for the distribution of training costs over time, the sub totals and total figures shown here have all been discounted to the first year of training.
Post-Graduate	1997/98 value	Post graduate medical education
Pre-registration house officer	£13,297	The total cost met by the Medical and Dental Education Levy (MADEL), during the one year spent as a pre-registration house officer. ¹⁸⁰ This represents 100 per cent of salary costs and a weighted proportion of MADEL funds, based upon an assumed proportional usage of the educational facilities by this grade of doctor.
Senior house officer	£16,911	The total cost met by the Medical and Dental Education Levy (MADEL), during two years assumed to be spent as a senior house officer. ¹⁸¹ This represents 50 per cent of salary costs and a weighted proportion of MADEL funds, based upon an assumed proportional usage of the educational facilities by this grade of doctor.
Total investment cost of training	£199,675	This includes the cost of undergraduate medical education, one year spent as a pre-registration house officer and two years spent as a senior house officer. In order to allow for the distribution of training costs over time, the sub totals and total figures shown here have all been discounted to the first year of training.
Total equivalent annual cost	£24,858	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 28 years. ¹⁸² This expected working life estimation reflects the distribution of years worked over a 42 year period.

¹⁷⁷ Information derived from a questionnaire survey of funding for and numbers of medical students at a sample of medical schools, in 1995-6, inflated to 1997-8 value.

¹⁷⁸ Callender, C. & Kempson, E. (1996) *Student Finances*, PSI: London. Inflated to 1997-8 value.

¹⁷⁹ NHS Executive, (1995) *SIFT into the Future*, Department of Health.

¹⁸⁰ Derived from budgetary information received from the Medical Education Funding Unit at the NHS Executive.

¹⁸¹ Derived from budgetary information received from the Medical Education Funding Unit at the NHS Executive.

¹⁸² Netten, A. & Knight, J. (1998) *Annuitising the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

**23.a Consultant
psychiatrist - unit costs**

Commentary: An estimation of the costs of a consultant psychiatrist. The default figures shown in the two accompanying tables reflect national costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London *	Non- London *	Notes
Annual	£114,732	£120,704	£106,703	Annual cost of employment, qualifications and overheads for the employee. Travel costs have not been included.
Weekly	£2,798	£2,944	£2,541	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£70	£74	£64	Total annual cost divided by the number of hours worked per year.
Per hour with patient	£222	£233	£201	Hourly cost adjusted to reflect the proportion of time spent with patients.
Per hour patient-related activity	£96	£101	£87	Hourly cost adjusted to reflect the proportion of time spent on patient-related activity.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

23.b Consultant psychiatrist - cost elements

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£56,407 per year	Average salary for a consultant psychiatrist based on the December 1997 scale midpoint including £6,680 corresponding to the third discretionary point. ¹⁸³ The sum also includes £292 to reflect the national level of distinction award payments. It does not reflect payments for London allowances.
B. Salary on-costs	£7,375 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£30,169 per year	See Table 23.c
D. Overheads	£16,000 per year	Comprises £2,000 for revenue overheads and £14,000 for secretarial staff costs.
E. Ongoing training	£1,191 per year	Ongoing training is calculated using budgetary information provided by the Medical Education Funding Unit of the NHS Executive relating to allocation of Medical and Dental Education Levy funds. Adjustment has been made to reflect assumed usage of educational facilities by this grade of doctor.
F. Capital overheads	£3,590 per year	Includes shared used of consultation and examination areas, and designated secretarial office space.
Working time	41 wks p.a., 40 hrs p.w.	Includes 30 days annual leave and 10 statutory leave days.
Sickness leave	5 days p.a.	Assumed sickness leave.
Study leave	10 days p.a.	Assumed study/training days.
<i>Ratio of direct to indirect time spent on:</i> face-to-face contacts patient-related activity	1:2.17 1:0.37	Assuming 29 per cent of consultant time spent in face-to-face contact and 67 per cent on patient-related activity. ¹⁸⁴ Time spent teaching has been disregarded, and non-contact time has been treated as an overhead on time spent in patient contact.
London multiplier	1.11 x (A to E) 1.27 x F	Allows for the higher costs associated with London compared to the national average cost. ¹⁸⁵ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to E) 0.99 x F	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

¹⁸³ NHS Executive (1997), Advance letter (MD) 2/97, March.

¹⁸⁴ Watson, J.P. (1985) *Psychiatric Manpower and the Work of the Consultant*, Bulletin of the Royal College of Psychiatrists, Vol. 9, September.

¹⁸⁵ Department of Health (1997) *Labour Market Forces Factor*

**23.c Consultant
psychiatrist - training elements**

Pre-registration	1997/98 value	Undergraduate medical degree
A. Tuition	£39,323	Total cost of tuition during a five year undergraduate medical degree. ¹⁸⁶ This allows for the annual wastage rates reported by a sample of medical schools, ranging from 1 per cent to 9 per cent.
B. Living expenses	£31,482	The estimated cost of a medical student's living expenses whilst undergoing undergraduate training. ¹⁸⁷
C. Clinical placement	£98,662	An estimate of the excess service costs as a result of providing clinical placements during the latter three years of the course. The per capita figure is estimated by allocating the Service Increment for Teaching (SIFT) levy. The sum includes both facilities and clinical placement components of the funding. ¹⁸⁸
Total	£169,467	In order to allow for the distribution of training costs over time, the sub totals and total figures shown here have all been discounted to the first year of training.
Post-Graduate	1997/98 value	Post graduate medical education
Pre-registration house officer	£13,297	The total cost met by the Medical and Dental Education Levy (MADEL), during the one year spent as a pre-registration house officer. ¹⁸⁹ This represents 100 per cent of salary costs and a weighted proportion of MADEL funds, based upon an assumed proportional usage of the educational facilities by this grade of doctor.
Senior house officer	£16,911	The total cost met by the Medical and Dental Education Levy (MADEL), during two years assumed to be spent as a senior house officer. ¹⁹⁰ This represents 50 per cent of salary costs and a weighted proportion of MADEL funds, based upon an assumed proportional usage of the educational facilities by this grade of doctor.
Specialist registrar	£32,129	The total cost met by the Medical and Dental Education Levy (MADEL), during four years assumed to be spent as a specialist registrar. ¹⁹¹ This represents 50 per cent of salary costs and a weighted proportion of MADEL funds, based upon an assumed proportional usage of the educational facilities by this grade of doctor.
Total investment cost of training	£231,804	This includes the consultant's pre-registration degree training and post-graduate medical education. In order to allow for the distribution of training costs over time, the sub totals and total figures shown here have all been discounted to the first year of training.
Total equivalent annual cost	£30,169	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 29 years. ¹⁹² This expected working life estimation reflects the distribution of years worked over a 42 year period.

¹⁸⁶ Information derived from a questionnaire survey of funding for and numbers of medical students at a sample of medical schools, in 1995-6, inflated to 1997-8 value.

¹⁸⁷ Callender, C. & Kempson, E. (1996) *Student Finances*, PSI: London. Inflated to 1997-8 value.

¹⁸⁸ NHS Executive, (1995) *SIFT into the Future*, Department of Health.

¹⁸⁹ Derived from budgetary information received from the Medical Education Funding Unit at the NHS Executive.

¹⁹⁰ Derived from budgetary information received from the Medical Education Funding Unit at the NHS Executive.

¹⁹¹ Derived from budgetary information received from the Medical Education Funding Unit at the NHS Executive.

¹⁹² Netten, A. & Knight, J. (1998) *Annuitising the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

24.a Consultant surgeon - unit costs

Commentary: An estimation of the costs of a consultant surgeon. The default figures shown in the two accompanying tables reflect national costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London *	Non- London *	Notes
Annual	£115,600	£121,572	£107,571	Annual cost of employment, qualifications and overheads for the employee.
Weekly	£2,820	£2,965	£2,561	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£70	£74	£64	Total annual cost divided by the number of hours worked per year.
Per hour patient-related activity	£95	£100	£87	Hourly cost adjusted to reflect the proportion of time spent on patient-related activity.
Per hour in operating theatre	£224	£235	£203	Hourly cost of time spent in operating theatre.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

24.b Consultant surgeon

- cost elements

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£57,167 per year	Average salary for a consultant surgeon based on the December 1997 scale midpoint including £6,680 corresponding to the third discretionary point. ¹⁹³ The sum also includes £1,052 to reflect the national level of distinction award payments. It does not reflect payments for London allowances.
B. Salary on-costs	£7,483 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£30,169 per year	See Table 24.c
D. Overheads	£16,000 per year	Comprises £2,000 for revenue overheads and £14,000 for secretarial staff costs.
E. Ongoing training	£1,191 per year	Ongoing training is calculated using budgetary information provided by the Medical Education Funding Unit of the NHS Executive relating to allocation of Medical and Dental Education Levy funds. Adjustment has been made to reflect assumed usage of educational facilities by this grade of doctor.
F. Capital overheads	£3,590 per year	Includes shared used of consultation and examination areas, and designated secretarial office space.
Working time	41 wks p.a., 40 hrs p.w.	Includes 30 days annual leave and 10 statutory leave days.
Sickness leave	5 days p.a.	Assumed sickness leave.
Study leave	10 days p.a.	Assumed study/training days.
<i>Ratio of direct to indirect time spent on:</i> patient-related activity operating theatre	1:0.35 1:2.17	Assuming 68 per cent of consultant time spent on patient-related activity and 29 per cent in theatre. ¹⁹⁴ Time spent teaching has been disregarded, and non-contact time has been treated as an overhead on time spent in patient contact.
London multiplier	1.11 x (A to E) 1.27 x F	Allows for the higher costs associated with London compared to the national average cost. ¹⁹⁵ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to E) 0.99 x F	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

¹⁹³ NHS Executive (1997), Advance letter (MD) 2/97, March.

¹⁹⁴ Audit Commission (1996) *The Doctors' Tale Continued*, HMSO, London.

¹⁹⁵ Department of Health (1997) *Labour Market Forces Factor*

24.c Consultant surgeon - training elements

Pre-registration	1997/98 value	Undergraduate medical degree
A. Tuition	£39,323	Total cost of tuition during a five year undergraduate medical degree. ¹⁹⁶ This allows for the annual wastage rates reported by a sample of medical schools, ranging from 1 per cent to 9 per cent.
B. Living expenses	£31,482	The estimated cost of a medical student's living expenses whilst undergoing undergraduate training. ¹⁹⁷
C. Clinical placement	£98,662	An estimate of the excess service costs as a result of providing clinical placements during the latter three years of the course. The per capita figure is estimated by allocating the Service Increment for Teaching (SIFT) levy. The sum includes both facilities and clinical placement components of the funding. ¹⁹⁸
Total	£169,467	In order to allow for the distribution of training costs over time, the sub totals and total figures shown here have all been discounted to the first year of training.
Post-Graduate	1997/98 value	Post graduate medical education
Pre-registration house officer	£13,297	The total cost met by the Medical and Dental Education Levy (MADEL), during the one year spent as a pre-registration house officer. ¹⁹⁹ This represents 100 per cent of salary costs and a weighted proportion of MADEL funds, based upon an assumed proportional usage of the educational facilities by this grade of doctor.
Senior house officer	£16,911	The total cost met by the Medical and Dental Education Levy (MADEL), during two years assumed to be spent as a senior house officer. ²⁰⁰ This represents 50 per cent of salary costs and a weighted proportion of MADEL funds, based upon an assumed proportional usage of the educational facilities by this grade of doctor.
Specialist registrar	£32,129	The total cost met by the Medical and Dental Education Levy (MADEL), during four years assumed to be spent as a specialist registrar. ²⁰¹ This represents 50 per cent of salary costs and a weighted proportion of MADEL funds, based upon an assumed proportional usage of the educational facilities by this grade of doctor.
Total investment cost of training	£231,804	This includes the consultant's pre-registration degree training and post-graduate medical education. In order to allow for the distribution of training costs over time, the sub totals and total figures shown here have all been discounted to the first year of training.
Total equivalent annual cost	£30,169	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 29 years. ²⁰² This expected working life estimation reflects the distribution of years worked over a 42 year period.

¹⁹⁶ Information derived from a questionnaire survey of funding for and numbers of medical students at a sample of medical schools, in 1995-6, inflated to 1997-8 value.

¹⁹⁷ Callender, C. & Kempson, E. (1996) *Student Finances*, PSI: London. Inflated to 1997-8 value.

¹⁹⁸ NHS Executive, (1995) *SIFT into the Future*, Department of Health.

¹⁹⁹ Derived from budgetary information received from the Medical Education Funding Unit at the NHS Executive.

²⁰⁰ Derived from budgetary information received from the Medical Education Funding Unit at the NHS Executive.

²⁰¹ Derived from budgetary information received from the Medical Education Funding Unit at the NHS Executive.

²⁰² Netten, A. & Knight, J. (1998) *Annuitising the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

**25.a Consultant
physician - unit costs**

Commentary: An estimation of the costs of a medical consultant. The default figures shown in the two accompanying tables reflect national costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London *	Non- London *	Notes
Annual	£115,562	£121,535	£107,534	Annual cost of employment, qualifications and overheads for the employee.
Weekly	£2,819	£2,964	£2,560	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£70	£74	£64	Total annual cost divided by the number of hours worked per year.
Per hour patient-related	£94	£99	£85	Hourly cost adjusted to reflect the proportion of time spent on patient-related activity.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

25.b Consultant physician - cost elements

Costs and unit estimation	1997/98 value	Notes
A. Wages/salary	£57,134 per year	Average salary for a consultant physician based on the December 1997 scale midpoint including £6,680 corresponding to the third discretionary point. ²⁰³ The sum also includes £1,019 to reflect the national level of distinction award payments. It does not reflect payments for London allowances.
B. Salary on-costs	£7,478 per year	Employers' national insurance plus 4 per cent of salary for employers' contribution to superannuation.
C. Qualifications	£30,169 per year	See Table 25.c
D. Overheads	£16,000 per year	Comprises £2,000 for revenue overheads and £14,000 for secretarial staff costs.
E. Ongoing training	£1,191 per year	Ongoing training is calculated using budgetary information provided by the Medical Education Funding Unit of the NHS Executive relating to allocation of Medical and Dental Education Levy funds. Adjustment has been made to reflect assumed usage of educational facilities by this grade of doctor.
F. Capital overheads	£3,590 per year	Includes shared used of consultation and examination areas, and designated secretarial office space.
Working time	41 wks p.a., 40 hrs p.w.	Includes 30 days annual leave and 10 statutory leave days.
Sickness leave	5 days p.a.	Assumed sickness leave.
Study leave	10 days p.a.	Assumed study/training days.
<i>Ratio of direct to indirect time spent on:</i> patient-related activity	1:0.33	Assuming 69 per cent of consultant time spent on patient-related activity. ²⁰⁴ Time spent teaching has been disregarded, and non-contact time has been treated as an overhead on time spent in patient contact.
London multiplier	1.11 x (A to E) 1.27 x F	Allows for the higher costs associated with London compared to the national average cost. ²⁰⁵ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to E) 0.99 x F	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service and Department of the Environment, Transport and the Regions.

²⁰³ NHS Executive (1997), Advance letter (MD) 2/97, March.

²⁰⁴ Audit Commission (1996) *The Doctors' Tale Continued*, HMSO, London.

²⁰⁵ Department of Health (1997) *Labour Market Forces Factor*

**25.c Consultant
physician - training elements**

Pre-registration	1997/98 value	Undergraduate medical degree
A. Tuition	£39,323	Total cost of tuition during a five year undergraduate medical degree. ²⁰⁶ This allows for the annual wastage rates reported by a sample of medical schools, ranging from 1 per cent to 9 per cent.
B. Living expenses	£31,482	The estimated cost of a medical student's living expenses whilst undergoing undergraduate training. ²⁰⁷
C. Clinical placement	£98,662	An estimate of the excess service costs as a result of providing clinical placements during the latter three years of the course. The per capita figure is estimated by allocating the Service Increment for Teaching (SIFT) levy. The sum includes both facilities and clinical placement components of the funding. ²⁰⁸
Total	£169,467	In order to allow for the distribution of training costs over time, the sub totals and total figures shown here have all been discounted to the first year of training.
Post-Graduate	1997/98 value	Post graduate medical education
Pre-registration house officer	£13,297	The total cost met by the Medical and Dental Education Levy (MADEL), during the one year spent as a pre-registration house officer. ²⁰⁹ This represents 100 per cent of salary costs and a weighted proportion of MADEL funds, based upon an assumed proportional usage of the educational facilities by this grade of doctor.
Senior house officer	£16,911	The total cost met by the Medical and Dental Education Levy (MADEL), during two years assumed to be spent as a senior house officer. ²¹⁰ This represents 50 per cent of salary costs and a weighted proportion of MADEL funds, based upon an assumed proportional usage of the educational facilities by this grade of doctor.
Specialist registrar	£32,129	The total cost met by the Medical and Dental Education Levy (MADEL), during four years assumed to be spent as a specialist registrar. ²¹¹ This represents 50 per cent of salary costs and a weighted proportion of MADEL funds, based upon an assumed proportional usage of the educational facilities by this grade of doctor.
Total investment cost of training	£231,804	This includes the consultant's pre-registration degree training and post-graduate medical education. In order to allow for the distribution of training costs over time, the sub totals and total figures shown here have all been discounted to the first year of training.
Total equivalent annual cost	£30,169	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 29 years. ²¹² This expected working life estimation reflects the distribution of years worked over a 42 year period.

²⁰⁶ Information derived from a questionnaire survey of funding for and numbers of medical students at a sample of medical schools, in 1995-6, inflated to 1997-8 value.

²⁰⁷ Callender, C. & Kempson, E. (1996) *Student Finances*, PSI: London. Inflated to 1997-8 value.

²⁰⁸ NHS Executive, (1995) *SIFT into the Future*, Department of Health.

²⁰⁹ Derived from budgetary information received from the Medical Education Funding Unit at the NHS Executive.

²¹⁰ Derived from budgetary information received from the Medical Education Funding Unit at the NHS Executive.

²¹¹ Derived from budgetary information received from the Medical Education Funding Unit at the NHS Executive.

²¹² Netten, A. & Knight, J. (1998) *Annuitising the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

26.a General practitioner - unit costs

Commentary: An estimation of the costs of a general practitioner. The default figures shown in the two accompanying tables reflect national costs. The unit costs include the equivalent annual costs of investment in training.

Unit cost 1997/98	National	London*	Non-London*	Notes
Annual	£140,441	£156,737	£131,018	Annual cost of employment, qualifications, overheads and travel for the employee.
Weekly	£3,020	£3,371	£2,818	Hourly cost multiplied by the average number of hours worked per week.
Hourly	£76	£84	£70	Total annual cost divided by the number of hours worked per year.
Per hour with patient	£131	£146	£122	Hourly cost adjusted to reflect the proportion of time spent with patients.
Per minute with patient in surgery/clinic	£2.18	£2.44	£2.04	Cost per minute with patients adjusted to reflect the proportion of time in surgeries/clinics.
Per minute of domiciliary visit	£3.10	£3.46	£2.89	Cost per minute adjusted to reflect the proportion of time in patients' homes.
Per domiciliary visit	£56	£62	£52	Hourly cost of domiciliary visits combined with the length of a domiciliary visit. Based on 13.2 minutes with patient plus 12 minutes travel time.
Per surgery consultation	£18	£20	£17	Cost of time spent in clinics combined with the length of a surgery consultation, assumed to last 8.4 minutes.
Per clinic consultation	£28	£31	£26	Cost of time spent in clinics combined with the length of a surgery consultation, assumed to last 12.6 minutes.
Per telephone consultation	£24	£26	£22	Cost of time spent on telephone to patients combined with the length of a telephone contact, assumed to last 10.8 minutes.

* London and non-London costs are estimated on a different basis in this report from that of the 'Ready Reckoner' software. The software is a prototype version and does not inflate components separately but applies an overall inflator.

**26.b General
practitioner - cost elements**

Costs and unit estimation	1997/98 value	Notes
A. Income	£50,399 per year	Intended average net income for 1997/8, plus expected further earnings associated with higher target payments less expected expenses associated with the activity. This figure has been adjusted to reflect the expected income for a whole-time equivalent GP. ²¹³ Since the GP is self-employed, National Insurance and superannuation contributions are not included.
B. Practice expenses Practice nurse Other practice staff Other practice costs	£12,153 £20,897 £10,170 p.a.	Assuming 34 per cent of practice nurse expenses (excluding training costs) Based on Schedule D information Based on Schedule D information
C. Qualifications	£28,997 p.a.	See Table 26.c
D. Ongoing training	£636 p.a.	Calculated using budgetary information provided by the Medical Education Funding Unit of the NHS Executive relating to allocation of Medical and Dental Education Levy funds. Adjustment has been made to reflect assumed usage of educational facilities by this grade of doctor.
E. Overheads FHS admin. Strategy & devt Primary care	£2,446 £986 £1,174 p.a.	Estimated assuming an average list size of 1885 (1996 figure, personal communication with NHS Executive). When inflated using the HCHS pay index and adjusted to allow for a whole-time equivalent GP, the costs were: family health services administration (£1.30 per head, £2,446 per GP), strategy and development (£0.52, £986), and supporting primary care-led purchasing (£0.62, £1,174). ²¹⁴
F. Capital overheads Computers	£6,802 per year £1,853 p.a.	Based on the new build and land requirements of a GP practitioner suite (Building Cost Information Service ²¹⁵ and Department of the Environment, Transport and the Regions ²¹⁶).
G. Travel	£3,928 p.a., £4.18 p. visit	Travel costs are estimated using the car allowance for GP registrars. It is assumed that GPs make 940 visits per year (see Workload Survey).
Working time	46.5 wks p.a., 40 hrs p.w.	Includes 15 days annual leave and 8 statutory leave days. ²¹⁷ 2 days sickness leave and 2.5 study/training days have been assumed (see Workload Survey).
Ratio of direct to indirect time on: direct patient contact home visits	1:0.74 1:1.46	The Workload Survey reported how GPs spent their time: surgeries 36.5 per cent, clinics 2.9 per cent, patient's own home 10.5 per cent, telephone consultations 7.7 per cent, travel 9.3 per cent, other patient-related activity 13.1 per cent, non patient-related activity 20 per cent.
Consultations Surgery Telephone Home visit Clinic	8.4 mins 10.8 mins 13.2 mins 12.6 mins	Based on the GMP Workload Survey. The time spent on a home visit just includes time spent in the patient's home. On average, 12 minutes were spent travelling per visit. This travel time has been allowed for in the estimation of the ratio of direct to indirect time spent on home visits.
London multiplier	1.11 x (A to D) 1.23 x E	Allows for the higher costs associated with London compared to the national average cost. ²¹⁸ Building Cost Information Service and Department of the Environment, Transport and the Regions.
Non-London multiplier	0.93 x (A to D)	Allows for the lower costs associated with working outside London compared to the national average cost. Building Cost Information Service

²¹³ Review Body on Doctors' and Dentists' Remuneration, Twenty-Sixth Report, Cm 3535, 1997, Stationery Office, London.

²¹⁴ Griffiths, J. (1998) *Roles, Functions and Costs of Health Authorities*, NHS Executive, Leeds.

²¹⁵ Building Cost Information Service (1998) *Surveys of Tender Prices*, February, BCIS, London.

²¹⁶ Department of the Environment, Transport and the Regions (1997) *Housing and Construction Statistics 1985-95*, The Stationery Office, London. The appropriate inflator is provided by the DETR on request.

²¹⁷ British Medical Association (1994) *General Medical Practitioners' Workload Survey 1992-3: Final Analysis*, November.

²¹⁸ Department of Health (1997) *Labour Market Forces Factor*

	0.99 x E	and Department of the Environment, Transport and the Regions.
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26.c General practitioner - training elements

Pre-registration	1997/98 value	Undergraduate medical degree
A. Tuition	£39,323	Total cost of tuition during a five year undergraduate medical degree. ²¹⁹ This allows for the annual wastage rates reported by a sample of medical schools, ranging from 1 per cent to 9 per cent.
B. Living expenses	£31,482	The estimated cost of a medical student's living expenses whilst undergoing undergraduate training. ²²⁰
C. Clinical placement	£98,662	An estimate of the excess service costs as a result of providing clinical placements during the latter three years of the course. The per capita figure is estimated by allocating the Service Increment for Teaching (SIFT) levy. The sum includes both facilities and clinical placement components of the funding. ²²¹
Total	£169,467	In order to allow for the distribution of training costs over time, the sub totals and total figures shown here have all been discounted to the first year of training.
Postgraduate	1997/98 value	Post graduate medical education
Pre-registration house officer	£13,297	The total cost met by the Medical and Dental Education Levy (MADEL), during the one year spent as a pre-registration house officer. ²²² This represents 100 per cent of salary costs and a weighted proportion of MADEL funds, based upon an assumed proportional usage of the educational facilities by this grade of doctor.
Senior house officer	£16,911	The total cost met by the Medical and Dental Education Levy (MADEL), during two years assumed to be spent as a senior house officer. ²²³ This represents 50 per cent of salary costs and a weighted proportion of MADEL funds, based upon an assumed proportional usage of the educational facilities by this grade of doctor.
GP registrar	£18,937	The total cost met by the Medical and Dental Education Levy (MADEL), during four years assumed to be spent as a specialist registrar. ²²⁴ This represents 50 per cent of salary costs and a weighted proportion of MADEL funds, based upon an assumed proportional usage of the educational facilities by this grade of doctor.
Total investment cost of training	£218,612	This includes the GP's pre-registration degree training and postgraduate medical education. In order to allow for the distribution of training costs over time, the sub totals and total figures shown here have all been discounted to the first year of training.
Total equivalent annual cost	£28,997	The total investment cost has been annuitised using a 6 per cent discount rate over an expected working life of 29 years. ²²⁵ This expected working life estimation reflects the distribution of years worked over a 42 year period.

²¹⁹ Information derived from a questionnaire survey of funding for and numbers of medical students at a sample of medical schools, in 1995-6, inflated to 1997-8 value.

²²⁰ Callender, C. & Kempson, E. (1996) *Student Finances*, PSI: London. Inflated to 1997-8 value.

²²¹ NHS Executive, (1995) *SIFT into the Future*, Department of Health.

²²² Derived from budgetary information received from the Medical Education Funding Unit at the NHS Executive.

²²³ Derived from budgetary information received from the Medical Education Funding Unit at the NHS Executive.

²²⁴ Derived from budgetary information received from the Medical Education Funding Unit at the NHS Executive.

²²⁵ Netten, A. & Knight, J. (1998) *Annuitising the human capital investment costs of health service professionals*. Personal Social Services Research Unit Discussion Paper 1355/2

26. General practitioner commentary

GP expenditure. GPs are paid capitation payments and fees and allowances for specific activities such as vaccination and immunisation, contraception and out-of-hours visits. These payments are constructed in such a way as to encourage the activity *and* to ensure that collectively they result in an average level of gross income (Intended Average Gross Remuneration; IAGI). This IAGI is intended to deliver an average level of personal income (Intended Average Net Income; IANI) and cover all expenses not met directly by the Health Authority. The degree to which this is achieved is monitored and if activities change in such a way that the IAGI exceeds or fails to meet expenses adequately then adjustments are made in following years. Thus the long-term increase in resource use resulting from increasing levels of vaccination and immunisation activities generally is not reflected in the fee for the activity. The long term increase in resource use associated with this increase in activity will be reflected in the total level of expenses incurred by GPs. Separately identifying additional costs associated with changes in any one type of activity would require an analysis that allowed for all other causes of variation in expenses over time.

Sources of information: 1996/7 estimates of expenditure based on information about previous expenses have been used where available (IANI and IAGI) and inflated to 1997-8 level. For direct reimbursement we have used 1994/5 accounts, inflated to 1997/98 levels using the HCHS pay and prices inflator. Information and guidance provided by the NHS Executive and the British Medical Association.

Allowing for whole time equivalence (wte): NHS Executive provided information about numbers of wte unrestricted principals. In October 1996 it was estimated that 32,590 individual GPs would provide 30,890 wte meaning any per head costs using 1997/8 data should be multiplied by 1.055 to adjust to wte costs. Thus IANI for 1997/8 of £46,450 becomes £49,006. The equivalent multiplier for 1994/5 expenditure is 1.04.

Allowing for expenditure not associated with GP activity. GPs IAGI covers trainees, associates, locums and assistants whose activity results in separate outputs. Expenditure on trainees and associates is deducted based on information from HA annual accounts. Locum expenses are also deducted: HAs pay 60 per cent when GPs qualify so the remaining 40 per cent is deducted from indirectly reimbursed expenses. On the basis of HA accounts and assuming that GPs pay locums 75 per cent of intended net remuneration, 4.4 locum days per wte GP are purchased when GPs qualify for allowances. It is known that GPs employ locums when they do not qualify for allowances, so the total amount deducted has been increased to allow for four weeks per GP. The assistants' allowance has been deducted from HA expenditure, but no further adjustment has been made. The resulting unit costs are not very sensitive to assumptions about the level of locum activity: rounded unit costs per consultation and per home visit do not change if the number of locum weeks purchased is one or four weeks.

Computer equipment. A study of 1994/5 accounts found that 53.7 per cent of computer reimbursements were for equipment. 50 per cent of computer capital reimbursements are made through HAs - the remainder are paid by GPs. Computer reimbursements are multiplied by 0.537 to get capital expenditure by the HA. This amount is deducted from directly reimbursed expenditure. The same is also deducted from indirectly reimbursed expenditure to reflect total GP expenditure. At present the total amount deducted is identified in the schema as computer equipment costs. This should be replaced by a discounted figure reflecting the level of computer equipment in GP surgeries. The situation at present is very variable between GPs and changeable over time, making it difficult at present to make any realistic assumptions.

Prescription costs: These are based on information about annual numbers of consultations per GP (8,450 in October 1994), number of prescriptions per GP (17,400) and the average total cost

per prescription (£8.28 at 1995/96

prices using Department of Health Statistics information). The cost is inflated to 1997/98 figures using the HCHS prices inflator. The number of prescriptions per consultation (2.1) probably reflects repeat prescriptions arising from initial consultations.

Overheads. Family Health Services administration includes administration of the contracts of GPs, financial payments to practitioners, transfers of patients' medical records, registration and allocation of GPs' patients, and breast and cervical cytology screening systems. Strategy and Development includes the costs of primary care strategy and development, and practice premises, staff, IT and personnel development. Supporting primary care-led purchasing includes the cost of support for activities such as locality commissioning, fundholding, and employment of GPs.

Activity. The GMP Workload Survey (1992/3) was conducted for every week of the year. The difference between the average number of hours per week of doctors undertaking GMS activity and those not undertaking such activity is the number of weeks leave/sick etc. Full time doctors activity was used in order to ensure that we are estimating for wte doctors. In order to convert the annual hours worked into weeks the average number of hours worked on GMS duties each week by GMPs carrying out GMS duties was used. On this basis wte GMPs work 46.5 weeks a year for 44.7 hours per week.

Coverage. Figures refer to Great Britain rather than England. GPs in Scotland do have lower incomes than GPs in England on average. This has been found to be due to lower list sizes and correspondingly lower levels of activity (GMSC 1994 Annual Report).

Fundholding. No allowance for fundholding has been included as the fundholding allowance covers the cost of managing the commissioning of secondary care so are not strictly a cost of primary care.

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